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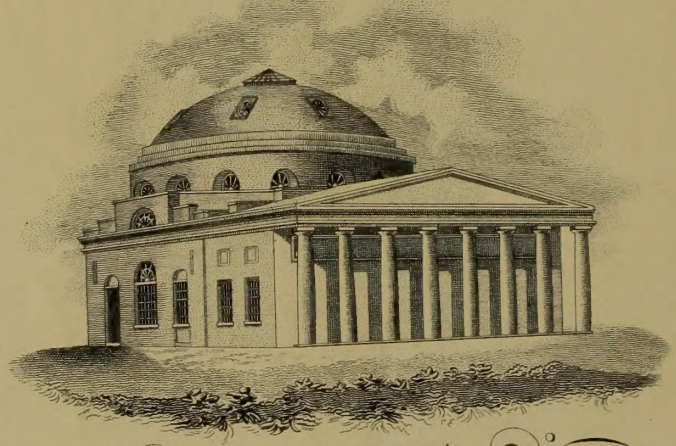

University of Maryland

University of Maryland Theses

Early Doctor of Medicine and Doctor of Physic Dissertations with Corrected Tables of Contents

These manuscripts described as either an Inaugural Dissertation or an Inaugural Essay were presented to the University of Maryland for the Degree of Doctor of Medicine and/or Doctor of Physic during the years 1813-1887. The individual dissertations were bound together during the 1940's. The original tables of contents for the bound volumes contained multiple errors in authors' names, titles, and/or years. To address these errors, an additional "Corrected Table of Contents" has been inserted at the beginning of each volume.

The project team who investigated and corrected the tables of contents were Richard J. Behles, Historical Librarian/Preservation Officer; María Milagros Pinkas, Metadata Management Librarian; Angela Cochrane and Carol Harling-Henry, Resources Division; Sarah Hovde, Abra Schnur and Megan Wolff, Services Division.

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Fickes, G. Milton	Diphtheria	(no title page)
Conley, H. C.	Tubercular Meningitis	
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UNIVERSITY OF MARYLAND

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1,2,3- No title page

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Electrical Tests in paralysis with. two illustrative Cases.

Thesis

Harry M. Thomas

1884

IMb
1900

Before taking up for consideration the action of electricity on diseased muscles and nerves it will be necessary to give some short account of the effects of electrical excitation on muscles and nerves in health.

The fundamental principle is, that healthy muscles and nerves can be excited to the performance of their natural function by electrical stimuli (whether galvanic or faradic) ~~and~~ and that the muscular contraction which follows takes place according to a definite law which is called the law of Contraction

I shall endeavor to state as briefly as possible this law.

In making these experiments two kinds of electrical batteries are used the faradic and the galvanic; from the former

we get what is called an interrupted current and from the latter a constant current.

In applying these currents one electrode is placed on some indifferent part of the body; for example the sternum or the patella and the other electrode is used to excite the muscle or nerve. If the stimulus be applied directly to the muscle we have direct excitation but if it be applied to the nerve going to the muscle we then have "indirect excitation" and in either case the only appreciable result is the contraction of the muscle

When a muscle is caused to contract by electrical stimuli the excitation depends for the most part on the change of density in the current which is traversing it or its nerve

and is brought about by interruptions of that current.

The contractions are stronger when the current is stronger and when the variations in its density are more sudden.

The phenomena produced by the action of the current from the faradic battery upon the nerves and muscles are classed together under the name of faradic excitability.

With this current the anode and the cathode have the same effect but the cathode is usually used to excite the nerve or muscle.

It is found that a current which is just strong enough to cause the feeblest contraction need only to be increased a little to produce a tetanic contraction of the muscle. And that for symmetrical nerves, currents

of equal strength will cause like results — and lastly for all nerves which lie just beneath the skin currents of very nearly the same strength are required to cause the minimum contraction in their several muscles

Now in disease the faradic excitability may be increased, that is the minimum contraction may be brought about by a weaker current than is normal, or diminished and even totally lost.

The law of galvanic excitability is more complex; here the different poles have quite different actions and I shall state the phenomena produced by each pole in weak, medium and strong currents

First with a weak current and using the cathode to excite we get a contraction

upon closing the current. Expressed by the formula K. C. C. (cathode closing contraction).

There is no contraction when the current is broken.

With this current we can get no contraction at all with the anode.

Next if we use a current of medium strength and the cathode as the exciting pole we get a stronger contraction upon closing the current (K C. C'). but no contraction when the current is broken.

Now using the anode ~~there~~ there is a slight contraction when the current is made. (A C. c.) And a stronger one when it is broken (A. O. c.)

Lastly with a strong current.

When the current is closed

with the cathode we get a tetanic contraction (K.C.Te.) and when the current is broken there is a weak contraction (K.O.c.)

With the anode there are strong contractions both upon closing and breaking the current (A.C.C.) (A.O.C).

These reactions are for convenience expressed thus:

Weak current. K.C.c

Medium current. K.C.C. - A.O.C. - A.C.C.

Strong Current. K.C.Te. - A.O.C. - A.C.C. - K.O.C.

They make up the normal galvanic excitability and in disease they differ from this standard both quantitatively and qualitatively. Thus it may take a stronger current to bring out the K.C.c. than is normal, or it may be caused by a much weaker one. And the order in which the different contractions appear may be changed.

Cases of motor paralysis may be divided into three classes with regard to their electrical excitability

1st. Those in which there is little or no change.

This is the case in many paralyses of cerebral origin as for example - Hemiplegia following Apoplexy or cerebral embolism. Those due to cerebral tumors &c. Also many which may be referred to the spine as in chronic Myelitis. And lastly in some few due to disease of the peripheral nerves - as in rheumatic paralysis, in slight facial paralysis and in slight traumatic paralysis.

2nd Those cases which show a simple quantative change

Among these those which have an increased electrical excitability

are less common - This occurs in the early stages of some cerebral paralyses; in some of spinal origin and in the first days of rheumatic facial paralyses - In these cases the minimum contraction of the faradic excitability is produced by a weaker current than is normal and with the galvanic current we get the K.C.C. with a very weak current, this is relatively true for the other contractions. It is also possible to get a tetanic contraction upon breaking an ordinarily strong current with the anode

The second group of cases which belong in this class are those which show a simple diminution of electrical excitability. This group includes all the cases from those which require simply stronger currents to

bring out their contractions to those in which the electrical excitability is totally lost.

It is made up of a few cases of cerebral origin; of cases of spinal paralysis which are accompanied with simple atrophy of the muscles and of cases of peripheral paralysis which have become incurable. It is also termed progressive muscular atrophy.

3rd " Those cases which show both qualitative and quantitative changes of electrical excitability.

These cases exhibit what is called the degenerative reaction

In the first and second class no special mention was made of either muscle or nerve as in those classes they behave in exactly the same manner,

but now in this class they behave very differently and must be studied separately.

For a short time after the the beginning of the paralysis there may be a slight increased electrical excitability in the nerve but this does not usually occur. the ordinary course is that in about a day or two after the attack the nerve begins to show a diminished excitability both to the faradic & galvanic current. This diminution procedes until in about nine or ten days neither the galvanic nor the faradic current when applied to the nerve will produce any contraction at all.

Of course from the very first there has been a total want of response to currents when

applied to the nerve above lesion. This total extinction of excitability of the nerve may last for a very short time or, as in incurable cases, persist for ever.

As the nerve begins to recover the electrical excitability makes its appearance and goes on increasing until it gets back to normal; As a rule it remains for a long time below this standard after voluntary motion has been completely restored.

An interesting condition occurs in an early stage of regeneration, Voluntary motions are produced before the nerve, below the point of lesion can be excited by electricity.

Erb to explain this holds that the new fibres which

are thrown across the lesion having no medullary sheath are capable of conducting impulses but cannot be excited.

The fact that if in this condition the electricity be applied to the nerve above the lesion, a contraction of the muscle follows, goes to show that this is the correct theory.

Now we must take up the changes which occur in the ~~the~~ muscle in this class of paralysis and this is the most complex and important part of the subject.

In the first place with regard to the faradic current the muscles show the same changes which were seen in the case of

degenerated nerves that is there is a constant diminution of faradic excitability up to the point of total extinction.

The muscle begins to regain its faradic excitability some time after the nerve and remains below normal for a long time.

The galvanic excitability undergoes very marked alterations. At first it is increased together with the faradic excitability for about one week after which time it increases in a marked degree until we get response to a current far too weak to cause a healthy muscle to contract and the character of the contraction is changed, for now in the diseased muscle we get a slow lazy contraction in

place of the sharp quick contraction with which the healthy muscle responds to the galvanic current.

Accompanying this increase of excitability there is a characteristic qualitative change in the law of muscular contraction.

This shows itself, first, by an increase of the anode closing contraction (A.C.C.) which often equals and in severe cases even surpasses the cathode closing contraction (K.C.C.). Then with regard to the opening contractions; the cathode opening contraction (K.O.C.) is increased relatively much more than the anode opening contraction (An O.C.) But in cases which have reached a certain stage there is no

contraction upon opening the current with either pole.

If the case is an incurable one the galvanic excitability again diminishes and the last response that can be gotten from the wasted muscle is a slight contraction upon closing a very strong current with the anode.

But if the patient is going to recover the contraction gradually conform themselves to the law of contraction and the increased galvanic excitability diminishes again and usually falls far below normal where it remains for a long time after voluntary motion has been established.

This depressed condition of the muscle is independent of the change in the nerve and from this many complex

conditions exist which are far beyond the scope of this essay.

The phenomena just described are grouped together under the name of the reaction of degeneration.

This degenerative reaction is found to a greater or less extent in all cases of paralysis which are accompanied by degeneration of the nerve and muscle. Thus we get it in all paralyses due to the division or cutting or crushing of the nerve. In certain paralyses of rheumatic origin more often than in facial paralysis.

In fact this reaction shows itself wherever the nerves are injured either mechanically or by disease, for example the pressure of tumors of extravasations of blood and the retraction of

cicatrices all cause this reaction

It is also found in paralysis from lead and other metals and in anterior poliomyelitis.

Even from this short and imperfect account of the changes in the electrical reaction of muscles and nerves in disease, I think it is quite evident that electricity is of great importance in making a diagnosis and a prognosis in motor paralysis

As we have seen the degenerative reaction is confined with one exception, anterior poliomyelitis, and possibly another, paralysis due to poisoning by metals, to those cases which are referred to disease

or injury of the nerve.

The exceptions noticed above are distinguished by well marked symptoms and need lead to no confusion and in my mind it is quite a question whether they can properly be called exceptions at all; for in Anterior poliomyelitis the lesion as the name indicates is in the anterior horns of gray matter of the spinal cord, but although the anatomical seat of the lesion places it with spinal paralysis still when we regard the physiological function of the anterior horns and examine the phenomena when they are diseased it is to me much more satisfactory to consider it as a disease of the

motor nerves at their origin.

The lesions in saturnine paralysis have not as yet been determined but there are very good authority for considering it a neuritis.

So we are enabled to distinguish paralysis of central origin from peripheral paralysis by the absence or presence of the reaction of degeneration.

Electricity also aids us in making a prognosis; for instance, there are, it will be remembered, some cases of peripheral paralysis in which there is no change in the electrical excitability. Now when it can be made out by other symptoms that the paralysis is due to the nerves and we find that the electrical

excitability is unchanged we may make a favorable prognosis and encourage the patient with the strong hope that he will recover in a few weeks. Whereas all the other symptoms being the same if we find the reaction of degeneration, an unfavorable prognosis must be made and the recovery of the patient not looked for for a very much longer time; And I know of no other method by which the difference could have been determined.

I will now relate two cases which I saw in the Hospital of the University of Maryland which illustrate very well of what importance

Electricity is in making a diagnosis

Martha Gordon colored age 18 years
was shot in the left side
of the neck with a ball from
a revolver. The ball passed
downwards in the direction of
the spinal column. The ball
was probed for but could not
be found. A piece of bone
was taken from the wound
which was supposed to be a
fragment of a vertebra.
She was perfectly paralyzed
both as to motion and sensation
in her legs and on her
body about up to the third
intercostal space. She was
weakness and was drop on

the left arm. The right arm was not affected at first and only very slightly at any time.

Now the question whether the paralysis in the left arm was due to cutting the nerve in the cervical plexus or to the injury which the spinal cord had received. The direction which the ball had taken and the fact that the right arm was not affected lent force to the opinion that the nerve had been cut.

Under Prof. Miles direction I made the examination with electricity, and found that the electrical excitability was unaltered in the left arm as well as in

all other parts of her body.

It had been clear from the first that the paralysis of the lower part of the body and legs was due to an injury of the cord, and now Prof. Mills was forced to consider the paralysis of the arm due to the same lesion. For if it had been caused by an injury to the nerve in its course we would have found that the paralyzed muscles exhibited the reaction of degeneration with the galvanic current.

I tested her muscles from time to time during her illness and never found anything but the normal reaction to electricity.

The patient died in

there were from the time she was shot.

At the autopsy it was found that the bullet passed in a direct line downward and inward just grazing the cervical plexus with out injuring it and lodged in the second dorsal vertebra. The cord had been softened across by contusion the ball not penetrating the membranes, and so the diagnosis was confirmed.

The other case was one of great interest in many ways but I must only take that part of it which bears upon my subject.

James P. Coe age 39.

On Monday the 19th of May 1884, Coe was driving a four horse advertising chariot into a low stable. He bent far forward to avoid the rafters the horses started and caught him under a girder. The horses were stopped but his friends in trying to get him out jammed him completly together so that his head was forced down between his legs.

When he was released he spoke a few words. He had a sensation of intense pain in his back and legs and there was complete paralysis with anaesthesia in the lower part of

his trunk and in his legs. His bladder and rectum were also paralyzed.

He became unconscious and remained more or less delirious for three days.

His back was very much swollen but there were no bones broken or dislocated.

Five days after the accident he was admitted to the Kinmundy hospital. He was then in somewhat improved condition for some power had been regained in his legs on the left side more than on the right; sensation also had been restored to some extent. The tendons of the foot were completely paralyzed

on both sides and the trouble with his bladder and rectum still continued.

Here again the question of diagnosis came up and every thing seemed to point to the spinal cord as the seat of the lesion. But upon making the experiment we found that the paralysed muscles had lost the faradic excitability and exhibited the degenerative reaction with the constant (galvanic) current they also responded to mechanical stimulation.

From these facts Prof. Miles made the diagnosis that the paralysis was due to the stretching of the Cauda Equina

and held out to the patient the strong hope that he would recover.

The subsequent history of the case confirmed the diagnosis and prognosis for under the use of the galvanic current he improved slowly but steadily regaining the control of his bladder in a little over four months from the time of his injury.

He left the hospital in August in a fair way to make a complete recovery.

S. Palmer Phillips 1885

1

Some More Recent Advances in Medical Ophthalmology.

Among the more recent advances in ophthalmology none has been more valuable than frequently. This bean is found growing wild in South America & when stripped of its outer covering and ground into a fine powder an aqueous solution being then made from 1 ℔ to 20 ℔ according to the case to be treated, it becomes one of the most important remedies in the whole Materia Medica of the ophthalmologist for certain diseases.

This remedy was brought before the profession some two or three years ago by Dr Wecker, the eminent French Ophthalmologist, & most strenuously upheld. He claimed for the solution made from this drug the wonderful power of destroying granulations of the lids so well known to the surgeon who deals in eye troubles.

This solution of Jequinity brew when applied with a camels hair brush to the palpebral conjunctiva, will induce, sometimes in a few hours & again

not until many applications have been made a most violent inflammation, with a diphtheo-croupous deposit over the whole surface to which the application has been made, sometimes also over the ocular of a greenish color.
As soon as the inflammation has been thoroughly established the application must be stopped the eye kept perfectly clean by frequent washings with warm water or by sol. bracic acid gxx to aq ℥i. As soon as the frequency has been dispensed with, the deposit immediately begins to separate.

from the conjunctiva, peel off
thus in a short time the whole
lid will be perfectly free; the
granulations which have pre-
viously given the patient so
much misery will have entirely
disappeared. Granular lids
which once would baffle every
thing the physician would
bring forwards to relieve it, will
now by the application of this
drug pass away as if by magic
i.e. soon after this it was brought
into use for Pannus with per-
fectly healthy Pannus conjunctiva
bringing about most marvelous
results: patients which at one time

could scarcely make out light from darkness even by its continual use made to see perfectly well. This is indeed an addition to ophthalmology for cases, which were once considered hopeless after having been treated by all means known to science, were gradually getting worse, are now often being treated by this drug in a short time restored to normal. Although severe pain will be experienced by the patient while the eyes are inflammed by this application, they will be willing to bear it, knowing

the good results to follow, during its use anodynes will have to be administered freely to the patient to alleviate his intense suffering. It was formally thought necessary that the patient under by jequinity should be kept in a dark room with eyes bandaged up during the whole time that the intense inflammation existed, but now that custom has changed, the patient is allowed to go immediately out into the open air or any where he pleases.

Jequinity should never be applyed to corneae having upon their surfaces ulcers, in it

tendency is to make them worse instead of benefiting them.
The eyes to which the application is intended to be made, should be looked after carefully to see that no purulent opthalmia lurks about for these cases will after the innoculation take on the very worst form of that most dreaded disease - the eyes thus instruments lost. Probably most cases which have resulted badly after Jequinety treatment were unrecognised purulent opthalmia, upon which the Jequinety inflammation had

been engrafted. This is certain-
ly the case in which the ap-
plication has been made to one
eye only - inflammation is soon
after established in the other.
Philocarpin the active princi-
pal of Jaborandi is a compar-
ative new remedy in eye
troubles. This drug has the
power of contracting the pu-
pils the same as Eserine - is
free from the head ache fol-
lowing the instillation of the
latter in to the eye, but of
course must be used in much
stronger solution. Besides its use
as a myotic, it is used quite

extensively in free doses internal-
ly to relieve local congestions
& hyperaemia by its sudorific
properties. Recent vitreous cloud-
ings have been made to disap-
pear under its persistent use.
Acute glaucoma & chorioditis
have been cut & hot in their
onset. Retinal & chorioidal hemor-
rhages have been made to ma-
terially disappear under its
use. Salivation often accompan-
ies the sweating process & is
very annoying and in some
cases nausea & vomiting but
the latter soon passes away,
the stomach being all right

by morning if the drug have been giving the previous night. Homatropine a derivative of Bella Atropina, is another comparatively new remedy in the list of mydriotics. The response of the pupil is as rapid to it as to Atropine but the effects are not so lasting, passing away in a comparatively short time therefore saving the patient the inconveniencies resulting from the instillation of Atropine into the eye for the detection of irregularities of refraction & Ophthalmoscopic examinations the Atropine effects lasting for some days.

Cocaine or the Muriate of Cocaine is an alkaloid obtained from the Erythrolyton Coca & is probably one of the greatest addition to Ophthalmology of the present day. The effects of this drug when applyed to mucous membranes is purely astonishing. The immediate cessation of pain & relief of suffering is something surely to be marvelled at when applyed to inflamed & painful membranes. This wonderful local anaesthetic, for it is local the effects being only observed at the point of application & the parts immediately adjacent to it, was in-

produced into this county about five months ago, & from that time up to this has formed much material for discussion in the profession.

A 1st solution is that generally used & when applied to the conjunctiva produces a blanching of the fotu. the vessels contracting & forcing the blood out. At the first instillation a burning sensation is perceived in the eye, to be followed immediately by loss of sensation, which will be complete in most cases if the drops have been instilled

about 3 times during a period of 15 minutes. At this stage if the eye be examined the pupil will be found enlarged or dilated which will last for 24 hours. All sensation will have been entirely abolished and the eye ready for operative procedures. It is really surprising how the patient will quietly down here a steel speculum adjusted, the conjunctiva divided & the muscle which even if may be cut in squint & never utter a murmur - unless to say that the sensation was rather

pleasant than not as I have heard them say. or the surgeon may go much deeper into the tissues of the eye. & do a cataract operation, the patient not emitting a sound except may hope a groan when the iridectomy is [illegible]. And even now some bold surgeons have gone farther & even down & enucleation by injecting by a hypodermic syringe some of the solution behind the eye ball into the tissues so abundant there, saying that it worked very well, but doubt it, I have only seen one attempt

& is failed & chloroform had to be resorted to, the failure might have been due to the drug not being as good as it might.

It is a very useful agent in cases of Nightmare [illegible] when the little patient may be suffering the most excruciating agony. A few minutes of the installation of this drug the little patient will be free from all pain, able to bear the strongest light, & look up & smile & you through its tears thus [illegible] the eyes for the reception of some strong

that will do the curring.
It comes in admirably well for cases of foreign bodies in the cornear or conjunctiva when the sufferer is almost unable to bear his great agony.
Soon after a few drops have been put into the conjunctival sac, the patient will be able to bear the roughest treatment to the eye you choose to give, & the foreign matter removed without any sign of suffering from the patient whatever.
Thus in all cases of great pain in the external tissues.

of the eye, requiring immediate alleviation, cocaine becomes very valuable.

As the physiological effect of Cocaine is to blanch the small vessels with which it comes in contact, it strikes me that it could be useful in acute Conjunctivitis, but as yet I have not had the opportunity to try it.

The coca of the drug is very great on account of its scarcity in this country, therefore the temptation to the manufacturing chemist to adulterate it is very great.

Thus if one gets a quantity & it does not work as it ought to. do not lay the blame to the drug but to the preparation of it, Although the cost of the drug is very great. it is much cheaper than either either or chloroform, not such a large amount being needed, a comparatively small amount of cocaine being necessary, anaesthesia being produced for a few cents, thus in every respect it is a very useful article, It is not only useful in eye troubles but

is very valuable in other branches of medicine which I could not take up.

Some Thoughts on Embryology

A Thesis written by,
E. K. Hardin,
Abbeville, S.C.

University of Maryland,
Session of 1884 & 1885.

Embryology

The field of the known and the unknown that opens up before the Medical student is grand not only as to its extensiveness but more strikingly so on account of the beauties and wonders that meet him at every step. In studying the human body anatomically and physiologically, the perfect composition of parts, the exactness of arrangement and the adaptability of organs, tissues &c. to various functions, we must think that Nature is a perfect workman and has done her work well. And it does seem to us that of all men the Medical student

should be inspired to look up through
nature to Nature's God". Especially
should this be the case when we study
the way in which Nature makes
the child.

Embryology for a long time
little understood, is today a science
as clear, as comprehensible, and as
beautiful as any other that pre-
sents itself to the mind of the
earnest student. While it may
look like presumption in one
of my limited knowledge and
experience, to attempt to write
a thesis on a subject which
might well engage the pen
of a practitioner of intellect
and experience, still under

the clear, able and very earnest lectures of honored Professor of Obstetrics, Prof. Mittenberger, I have been so much impressed with the beauty of this subject that I select it as the basis of my thesis. While my knowledge of it is yet imperfect, and though my views be purely expressed, still I beg to proceed offering as my excuse for errors inexperience, and for the seeming presumption an earnest desire to know more of the development of the human embryo.

We find the reproductive power of Nature most strikingly displayed throughout the whole

range of math, especially is this the case in the animal and vegetable worlds.

In woman with its complex arrangement of ovaries, Fallopian tubes and uterus, we find a nice adaptability of means to an end; each organ working in conjunction with its fellows to produce, nourish and mature forth at the proper time the living child.

In considering the manner in which this is accomplished we need merely glance at the genesis of the ovum, a little mass of protoplasm encapsuled in its Graafian vesicle.

We need not consider its early formation about the epithelium of the Wolffian body in the fœtus; nor how after being developed many of them are collected together, and tucked away in a mass of stroma thus making up the very important ovary. We can not here trace the growth and gradual development of the ovaries, small and insignificant in appearance, yet with their thirty six thousand ova, each, grandly important to the womanhood of the female. They are important also to the whole race of mankind, for in these small bodies lies the motherhood of woman. From

these spring all men with their varied capacities and wonderful possibilities. Here we find the secret of human propagation, and the capacity to obey the Divine injunction "Be thou fruitful multiply and replenish the earth."

At puberty we find some very important changes taking place in the female. Apart from the physical processes going on in her body, the lively, romping, unsuspecting child strangely develops into the modest dignified woman. She is now prepared to occupy a new position in the scale of being. Nature, by

her own peculiar method has fashioned her into a being capable of performing the highest of animal functions viz: those of motherhood.

One of the most obvious indications of the fact that this period has arrived is that of menstruation, the outward sign of ovulation. At this time all of the parts are brought into proper relation with each other, and the ovisac bursting the ovum starts out on its way to the uterus. Normally after leaving the ovary, it is taken up by the fimbriated extremity of the Fallopian tube and pa-

it reach this is the uterus.

Just how the ovum is taken up by the fimbriated extremity of the Fallopian tube on corresponding side; and especially how the ovum from ovary of one side may be taken up and conveyed to the uterus by tube of the other side, is a matter not very clear to my mind.

The ovum after being impregnated may fail to find its way into the Fallopian tube, and attaching itself somewhere in the abdominal cavity, may form what is called abdominal pregnancy.

e it may attach itself about the ovary and form ovarian pregnancy. A, which is the most common abnormality, it may, from some disordered condition of the tube, be arrested there and form tubal pregnancy. In this form rupture of the tube generally takes place after a few months.

The ovum at the time of its discharge from the ovary, is no longer a simple cell composed of ordinary protoplasm but presents characteristic peculiarities. In diameter it measures about 1/120 of an inch. It is surrounded by a transparent

envelop called the vitelline mem-
brane, or zona pellucida. The
body of the cell becomes the vitel-
us or yolk of the ovum. The nucleus
of the cell is converted into a
large, clear, colorless vesicle, known
as the germinative vesicle. Within
this we find the nucleus pre-
senting as a dark, probably
solid body called the germina-
tive spot.

The ovum is short-lived, re-
taining its vitality if not im-
pregnated, only about ten days,
during which time it passes
through the tube into the ute-
rus. At some point, in its pas-
sage through the tube it may

meet with the spermatozoa from the semen of the male and become impregnated. How impregnation takes place is not known absolutely. Suffice it to say there must be actual contact between ovum and spermatozoa, and it is necessary for the spermatozoa to enter, in some way, the vitelline membrane, and dissolve in the vitellus.

Lusk says, that the first indication of the changes effected in the ovum by contact with the male element of generation, and a sign too, conclusive of fecundation, is the spontaneous appearance of a second nucleus

in the center of the vitellus. This may be recognized in from fifteen to thirty hours after fecundation. Very soon the vitelline nucleus separates into two nuclei. The vitellus divides itself by a similar process into two halves. This process of subdivision, segmentation, goes on until we have a mulberry mass formed. This process of segmentation takes place during the passage of the ovum through the Fallopian tube. After it reaches the uterus the segments are converted into cells. These cells soon arrange themselves in the form of a vesicle, lined with pavement epithelium. As the yolk

mass of albuminous fluid accumulates in the interior of this membrane and by pressure spreads it out on the internal surface of the vitelline membrane. The external or vitelline membrane forms the primitive chorion, whilst the internal membrane formed by the cleavage of the yolk is called the blastodermic membrane or vesicle.

By the absorption of fluid, in its transit through the Fallopian tube, the ovum is increased upon the completion of the blastodermic membrane from 1/60 to from 1/30 to 1/25 of an inch in diameter. The blastoderm is separated into

three membranes, the outer of which is the epiblast or ectoderm, the middle the mesoblast or mesoderm, and the inner the hypoblast or entoderm. These membranes constitute the undeveloped foetus, and in them membranes or cells are implanted, in some unknown manner, the peculiarities mental, moral and physical, of father and mother. So a strange intblending & intermingling of substance with substance, of cell with cell, is due inheritance with all its strangely interesting and wonderful phenomena. From the ectoderm are developed

the epidermis, hair, nails, skin, brain, spinal cord, the organs of special sense, and perhaps to some extent, the genito urinary system. The mesoderm gives rise to the bony framework, the muscular structures, blood vessels, and blood glands. The entoderm furnishes the epithelium lining the walls and glands of the intestines.

Before the complete formation however of the entoderm, a bright round spot makes its appearance upon the surface of the blastodermic vesicle. This spot marks the point at which all the most important processes connected

with the development of the embryo take place, and is called the area germinativa. In this portion of the mucous first trace of the embryo appears as a faint streak, called the primitive trace or groove. Here we find the rudimentary structures which develop into the vertebral column and canal. The embryo begins to be folded off first in front and then behind. These folds result in a constriction separating the embryo and the yolk sac or umbilical vesicle. The splitting of the mesoblast into a splanchnic and somatic layer has taken place

and at the front and hind end of the embryo a fold of the [illegible] ic mesoblast and epiblast begins to rise up and grow over the head and tail of the embryo. These two folds form the commencement of the amnion. The head and tail folds of the amnion are continued round the two sides of the embryo until they meet and unite in a continuous fold. The whole foetus is now enveloped in the amnion. Contraction goes on, on front of foetus, the umbilical vesicle by a fold upon itself giving rise to the allantois which is to become a most important arrangement in the foetal circulation.

The umbilical cord after having nourished for a time the fetus, is contracted more and more until it atrophies.

Before the ovum reaches the uterus we find this organ undergoing important changes; by a series of preparations making ready a nidus for the reception and future care of the coming fetus. The mucous membrane of the uterus is very much increased in vascularity and thickness, and the whole of it is thrown into convolutions. It is this thickened vascular, softened mucous membrane that furnishes the decidua vera. This is confined to the body

of the uterus, does not extend into the cervix. The ovum soon after its entry into the uterus finds a lodgement in one of the folds of the decidua vera, usually in the upper portion of the uterine cavity, upon the posterior wall near one of the tubal orifices. The point of attachment between the ovum and the decidua is distinguished as the decidua serotina. Its very great importance is due to the fact of its becoming the site of the placenta.

When the ovum is caught in one of these folds of mucous membrane, it seems to act

as a stimulus, thereby exciting increased growth in the membrane, causing its folds to approach each other, thus enclosing the ovum entirely in what we call the decidua uterina.

In regard to the nourishment of the ovum we have seen that the umbilical vesicle contributed somewhat to its early nutritive supply. This arrangement, however, was only temporary. After it becomes encapsuled in the uterus decidua, it is for a time nourished through a process of endosmosis by the absorption of uterine milk. This soon becomes insufficient

for the growing foetus, and some other means of support must be devised. Nature has adopted for this a most beautiful and interesting process by which the circulation of the foetus is brought into close relation with that of the mother. In order to understand this arangement we must consider briefly the chorion and the allantois.

The chorion is the external membrane that invests the ovum. It seems to pass through three distinct stages of development. At first it is merely the vitelline membrane, and entirely non-vascular. Again it is formed by

a passing together of the vitelline membrane and the outer lamina of the amnion, or of the reflexion from which the amnion was formed. This chorion like the one it superseded is speedily covered with a growth of vascular villosities. These villosities are not solid, but hollow like the finger of a glove. They soon reach an extraordinary development. Fine villi sprout upwards from the chorion, the older ones push out buds and lateral offshoots, so that in the third week the entire surface of the ovum is covered with a dense forest of villi presenting delicate and graceful

characters. A new organ must be established between the villi of the chorion and the embryo. This organ, called the allantois, begins as a sac like projection from the posterior extremity of the intestine. It is composed of two layers derived respectively from the entoderm and the inner stratum of the mesoderm. It becomes vascular, the inner surfaces of the sac adhering together so as to form a single membrane. During the third week the allantois reaches the chorion on which it spreads forming a complete vascular lining. The vessels of the

allantois only : two points
into the villi of the chorion. The
chorion and the allantois fuse
together and form the permanent
chorion. At first the embryo is
connected with the vascular
chorion by two arteries and
two veins. The two arteries re-
main as the arteries of the um-
bilical cord, one of the two veins
disappears while the other becomes
enlarged and forms the um-
bilical vein.

The decidua serotina is the
maternal portion of the pla-
centa, the chorion the foetal
portion. The villi of the chorion
arborescent in form fit into

vascular crypts formed in the decidua serotina. In the deeper layer of the serotina are large sinuses through which the maternal blood flows. Into the allantoic villi fœtal blood vessels run and form capillary net works. There is no direct and continuous communication between the fœtal and the maternal blood vessels. The blood of the fœtus is every where separated from the blood of the mother by a thin partition resulting from the fusion of four membranes; the membrane of the fœtal villus, secondly that of the chorion vesicle; thirdly the wall of the fœtal blood vessel, and fourthly

the wall of the uterine sinus.
This partition is very thin
owing to the abundant ramifi-
cation of the foetal vessels. The va-
cular tufts in which the blood of
the foetus circulates are, as it were,
bathed with the blood of the
mother in the placental sinuses,
and the interchange of material
between the two goes on with cor-
responding activity. The placenta
acts as the respiratory organ of
the child, decarbonizing and ox-
ygenating the blood for its use.
In the placenta, the foetal blood
gives out carbon dioxide, urea
and other wastes, and receives
in return oxygen and food

materials. So the placenta forms also the digestive and excretory organs of the child. Hence we find the placenta to be a most important and organ in intrauterine life. From the period of its formation, about the beginning of the fourth month, the foetus is entirely dependent upon this organ, as the channel through which its supply of nourishment is received from the mother.

The interchange of blood, & materials, going on between the mother and the foetus explains, without doubt, the strange occurrences which we observe, from time to time, taking place in mother

and child. The mother may become inoculated with syphilis or some other poison through the medium of the placental circulation. It has been observed in the lower animals that where the female has two successive litters of young by different males, the young of the second litter will sometimes bear marks resembling those of first male. In these instances the influence which produces the mark is transmitted by the first male to the foetus, from the foetus to the mother, and from the mother to the foetus of second litter. Likewise the foetus may be influenced by

medicinal substances taken by the mother, or by mental impressions made upon her.

It is thought by some that various deformities and congenital deficiencies originate from nervous impressions experienced by the mother. Hatton says "It is not always easy to explain the mode in which these influences are conveyed. But it is well known that nervous impressions in the mother will cause disturbances in the circulation through the vaso motor system, thus affecting the brain lungs or skin, etc. If a nervous shock to the mother may excite premature contraction in a preg-

vant uterus, and occasion consequent abortion, it is evidently capable of causing partial or temporary disturbance of its vascularity. And as the nutrition of the foetus is provided for by the placenta it will suffer from derangement of the placental circulation. These effects may be manifested either in the general atrophy and death of the foetus, or in the imperfect development of particular parts; as in the adult a morbid action may either operate on the entire system, or be limited to some organ especially sensible to its influence."

The above reasoning of M. Dareste seems to be well founded, but whether the conclusion is correct I am not prepared to say. Certain by some peculiar cases have been reported by M. Hamilton of New York, and others.

Let me refer in a general way to the formation of the various parts of the foetal body, and hasten to a close.

The general outline of the embryo is due to the direction and shape of the several folds which share in its formation. First a peculiar thickening at the cephalic end of the embryo is may be seen more readily in

distinguished which will be the head from that which will be the tail. In the tubular sac of the embryo, through activity of growth, appear thickenings, ridges, buds or other processes which develop into the extremities. Similar thickenings and ridges give rise to the jaws and other parts of the face. By the unequal development of these outgrowths the body of the foetus is moulded into its proper outward shape, and after formation floating in the liquor amnii, it continues to grow till parturition in a manner similar to extra uterine development. We might notice

the formation and development of the alimentary canal, organs of circulation &c; especially the beautiful arrangement for the foetal circulation, its anatomical peculiarities, ductus venosus, foramen ovale, eustachian valve, ductus arteriosus &c, but we have written so much already to expect our Professors to read it.

Chorea

or as it is more commonly called St. Vitus's Dance is a disease of the nervous system characterized by irregular and involuntary muscular movements without the loss of consciousness. The voluntary muscles are the ones most often effected and the part of the body are the arms hands and neck. Generally the disease runs a short course and ends in recovery but in bad cases it may last for months, years or even result in death though this is rare.

Etiology- the causes of this disease is not as yet well understood

It is a disease of childhood but adults are not entirely exempt. It occurs more frequent between the age of six and fifteen years and far more frequent in girls than in boys. This may partially be explained by the preponderance of the nervous system in girls and their muscles not being as well developed as boys. Rheumatism often precedes it or is present when the attact comes on. Anaemia is another not infrequent cause. Over work, anxiety, excitement and above all sudden fright may bring it about. Predisposing

causes are hereditary influence, child-birth, Chlorosis, and especially a recurring attack of the disease.

Symtoms — In the early stage the child may be noticed to move around but regarding its playmates or attending to its books with any care or diligence. Indeed there is generally some real or apperient mental deficiency associated with more or less emotional disturbance indicated by fretfulness and timidity. Hee is seen to shift his position or one or both limbs often and a certain clumsiness in his movements or gait.

Febrile movements are not present in this affection unless it is complicated with some other disease. After the disease is fully developed the movements are exceedingly characteristic. They are not simple flexion and extension but sudden impulsive movements succeeding one another at irregular intervals which are not under the control of the patient. The convulsions generally subside in some degree when the patient is sitting or lying down and if they are not very violent he may control them for a short time. During sleep they are

usually quiet unless the case is a very severe one. They become aggravated whenever he endeavors to execute voluntary movements, whenever anything occurs to excite him, whenever he feels he is being observed. Thus it happens that the medical attendant rarely sees him at his best. The eyes and mouth move in various odd ways on account of these muscles taking part in the choreic movements. If the patient be asked to put out his tongue he opens his mouth wide and protrudes it with a jerk and then as suddenly with-

draws it, the mouth and jaws closing upon it with sudden violence. If he attempt to answer questions the convulsive movements of the face and mouth become aggravated and he has extreme difficulty in articulating his words. No facts usually manifest choreic phenomena more strikingly than the upper extremity. When the patient stands or sits the feet will be dragged scraped or shuffled over the floor and in walking one leg will be dragged behind the other or else it will be suddenly thrown across the other.

Symptoms not so observable as those all ready discribed but of more or less importance are apt to attend the course of the disease such for instance as a bad appetite, impaired nutrition, bowels generally constipated. Palpitation of the heart is noticed often which doubtless is caused by the disease itself independent of any organic disease though organic disease is liable to be developed during an attack.

Pathology. The pathology of chorea is very obscure. What part of the nervous System are

effected is not known or the nature of the morbid process. The fact seems to be that it does not depend upon any particular lesion in the brain or chord but that it is a wide spread hyperaemia of the nervous centers.

Prognosis - Chorea is often obstinate or incurable in adults in children it usually terminates favorably in from three to four months. If the disease be of a protracted and grave character it may give rise to a central organic disease. This is the course of most of

the grave cases, congestion or softening or other lesions occuring over a greater or less portion of the nervous centers.

Treatment.— Hygenic measures are of the greatest importance in the managment of this disease. All things tending to excite or annoy the patient should be avoided. The child should not be allowed to go to school nor be with children who would make fun or annoy it in any way for all such acts only tend to make it worse. Good wholesome diet should be allowed, early hours, plenty of fresh air gentle exercise,

cold or tepid baths and change of scene. These matters should be looked after and will aid greatly in the treatment of the case.

Medicine. We have no drug in the Materia Medica which can be relied upon for a prompt cure of chorea. However a great deal of benefit may be derived from judicious use of the remedies we have at our command. There are a number of useful remedies which should be adopted to the individual cases. Not infrequently there are other complications or causes of the disease present which

should be treated. Worms in the bowels should be treat by purgatives. Rheumatism should be treated with salines and the salicylates. Anaemia is present in a large proportion of cases and should be treated by appropriate remedies of which iron is the chief. Of the remedies addressed to the disease itself arsenic is by far the most useful and important. It should be given in the form of Fowler's solution because it is the most convenient preparation We should commence with three or four drops well diluted in water to be taken three times

a day after meals. The dose should be gradually increased until some of its characteristic effects are observed when it may be suspended for a few days after which the same dose should be began with that we stopped given and continue so until we arrive at the maximum ammount that can be borne. Children bear this drug much better in proportion than adults and we should not hesitate to push it until some of its effects are observable for it is only then we can expect its real benefit to be shown.

Strychnia is a very usefull remedy causing great improvment in the general health of the patient. And it may be prescribed in many cases with the hope of benefit. Very small doses may be used at first and gradually increase the dose. The two drugs named (Arsenic and Strychnia) are very violent poisons and should be watched with a great deal of care especially when given to ignorant people less they do harm with them. Sulphate of Zinc is a very good remedy in

these cases. Remarkably good results are obtained from its use in some of these cases that resist the influence of other remedies. The dose of it should be increased until gtt xx or xxx are taken at one dose. Opium given until slight narcosis is produced and maintaining it for several days at a time will have excellent results on some cases. Valerian, assafoetida, and camphor may be used with some hope of benefit.

In cases of great severity where the patient throws his limbs violently great care should be taken to prevent injuries which will occur if the patient is left to himself. Erysipelas and abscesses result sometimes from injuries received in this way. Sleep and rest is of great importance to secure for the patient in these very severe forms of the disease and for this purpose Chloroform Chloral and opium should be used. Parts that are likely to be injured

should be bounded upon and
as much rest secured for
the patient as possible
for it is the loss of sleep,
inanition and irritation
that causes death in such
cases.

G. L. Shipp.

under various circumstances it would be difficult to determine from statistical reports what plan had been the most successful.

From the great mortality which prevailed under the active or antiphlogistic plan it would appear that active and heroic methods were the least suitable of any plan or method heretofore employed.

Pneumonia being an acute disease with the natural tendency to spontaneous recovery under favorable

the third to the twelfth day
it is difficult to judge of
the effects of active medicinal
interference, and to this
may be added, the manner
in which its mortality
is affected by age sex
constitution, and by the
presence or absence of
complications, and the
unknown epidemic con-
ditions, which have no
little effect in the same
direction, it would be
next to impossible to collect
sufficient data from which

to make any logical com-
parison between patients
under a like circumstances
but under different plans
of treatment so as to form
any true conclusions as
to the real value of the dif-
ferent methods adopted
for its cure. From statistical
evidence, and the experience
of careful observers, it
appears that medical in-
terference and active treat-
ment have very little in-
fluence, either in shortening
the duration or diminishing
the mortality of pneumonia,

It must be admitted, however, that a more general plan, or a wider sense of treatment in the way of nursing, diet, and different remedies adopted to individual cases must undoubtedly have a very great influence in aiding nature to effect a cure. No specific plan or class of remedies can be resorted to that will meet the indications of every case met with. The depletory plan by venesection has been abandoned by the

perhaps generally and it is but reasonable to conclude that the supporting and stimulating plan has been carried to as great extremes though no doubt with less fatal results. There is no just reason to doubt that quite a number of cases may be aborted by suitable action interference in the first stage of this disease. Any plan of treatment, or the employment of any class of remedies indiscriminately would be most likely to not only to

[illegible] but
absolutely injurious, In
regard to the employment of
venesection in the treat-
ment of pneumonia
the profession has arrived
at the conclusion that
bleeding increases the mortality
in young children, in old
persons and in weak con-
stitutions also sufferers
from chronic diseases and
that it does not shorten
the duration nor diminish
the pyrexia, but admit that
there cannot do occasionally
follow its employment

It is at least reasonable that the antiphlogistic plan cannot be relied on for the arrest or abolition of this disease any more than in any other inflammatory disease.

The different therapeutical indications furnished by the different stages must be separately considered and each indication met according to its importance. From the experience of others there is just reason to believe that quinine given in full

dose of from ten to
twenty grains at a time
combined with opium, or
to be given in from six
to ten hours may arrest
the disease. An effort
should always be made
to render a case abortive
if seen in its first stage,
and there is no one rem-
edy that promises more
in this line than quinine
it being a good antipyretic
and comparatively harmless
vegetable alkaloid.
As to blood letting I see
no good reason why it

[illegible] not be resorted to in [illegible] cases (not contra indicated by age, debility or other unfavorable conditions) where a large tract of lung is being invaded and dyspnoea threatens asphyxia, and when distention of the superficial veins indicate over filling of the right side of the heart.
Topical remedies have their value and should not be overlooked first among them may be considered scarification

and cupping, although not practised much of late, are valuable agents, sinapisms, hot application and turpentine stupes applied to the seat of pain are also very useful remedial agents and should not be neglected.
The objections however to hot poultices and cloths wrung out of hot water is the difficulty of constant and uniform applications of temperature. If they are left off too long the good effect they [illegible]

have had as last, and further more they must necessarily be a source of considerable annoyance to the patient. Mustard poultices and dry heat properly applied are of service in the way of revulsion and palliation.

Sedative remedies such as tartar emetic Veratrum Aconite and gelsemium may be resorted to in severe cases where the symptoms are urgent enough to demand such powerful agents

No well informed Physician would venture to use this class of remedies where there was prostration with a low range of temperature and a tendency to collapse. Blisters are likely to prove harmful if employed too early and then they are in the way of auscultation and percussion in examination during the latter stages of the disease, but when applied at the proper time may aid in the process of resolution. In many cases of an=

complicated acute pneu=
monia in good con=
stitutions, the temperature
being kept under control
by properly graduated
doses of quinine and
the bowels sufficiently
evacuated by saline par=
gatives, and the skin
and kidneys assisted
to perform their func=
tions by the use of suit=
able diuretics and sudor=
ifics, opiates to relieve the
pain with due attention
to topical measures di=
rected to the chest, [illegible]

cases will pass safely through the different stages and convales-cence be established without much further medical interference. A large majority of cases however, will not yield to so simple a plan of treatment. If the case does not progress favorably it must be treated in ac-cordance with the symp-toms and nature of the case. Many cases [illegible] require stimulant

from the outset; cases attended with extreme exhaustion, low temperature, and frequent but weak pulse, and with symptoms indicating oedemena of the lungs will come under this category.

The treatment of acute pneumonia then may be said to consist mainly in lowering the temperature and keeping it in bounds compatable with life, relieving pain and removing

congestion wherever it may exist by measures and remedies calculated to act in that way. and by restoring the secretions generally supporting the patient and by using suitable means for general comfort. Delirium is a frequent symptom in this disease, and considering the high range of temperature and the want of proper oxygenation of the blood it is nothing surprising.

that I have seen in a great number of cases. If it be not due to complication, or sympathy, or congestion of the vessels of the brain stimulants will be admissible and will generally relieve it. There can be no objection to the judicious employment of opium or its preparations, especially, if there be much pain or restlessness. It would be contra-indicated in the third stage of the disease if

the bronchia were being filled with secretions and the strength of the patient failing. The treatment of pneumonia after convalescence is established need not neccessarily differ from the treatment of other fevers or inflammatory diseases. —

Your Truly
Written entirely by
[illegible]
[illegible] N.C.

A febrile disorder characterized by an inflammation of the agenerated and solitary glands of the intestinal gastro-intestinal disturbance and a peculiar [illegible]

Bristow.

Cavation and [illegible]

Typhoid is a disease of world-wide [illegible], [illegible] occurring in an endemic form, but [illegible] assuming the [illegible] of a genuine epidemic — [illegible] [illegible] to [illegible] [illegible] or to any age —

It invades the lofty mansion of the rich [illegible] as the weather beaten but [illegible] the poor. It attacks the [illegible] [illegible] [illegible] silvered sugar. Sex is without control over it. Youth seems to be more liable to it than the adult and there more liable than the aged. The confusion that has existed up to late years in regard to Typhoid and Typhus fever [illegible] the exact knowledge of their [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] specific diseases

but if this be so the im-
-munity is much less per-
-fect than in other specific
contagious fevers.

Symptoms.

After a more
gradual approach than that
of any other disease, with
languor, debility, headache
anorexia for several days.
Epistaxis and a bronchial
cough are absent pathogno-
-monic early symptoms.
The patient is confined to his
bed with a violent fever and
his face assumes a purplish
red flush. He lies in a
dozing condition and is often

delirious especially at night.
Generally about the end of
the second week there is
considerable loss of hearing
and sight. Swelling of the
(tympanites) belly is almost
always present at the end
of the first week - Some
tumors but not always
diarrhoea - [illegible] present [illegible]
[illegible] about the [illegible]
[illegible] [illegible]
[illegible] often present [illegible]
[illegible] [illegible] [illegible]
[illegible] of the second week and
last [illegible]
Generally [illegible] passing [illegible] the
[illegible] [illegible] [illegible]

[illegible]

And if death is now going to follow sinough, [illegible] and involuntary discharges will be present. Abscess and Bed-sores will often be present from the patient lying in one position so much. There is always great danger of the perforation of the bowel taking place by the ulceration of pyrosis [illegible]. And when this does occur there will be a violent peritonitis set up and almost always end fatal. The pulse [illegible] fast, some times very little above the normal, and from that up to a [illegible]

or even more per minute.
The respiration is generally
accelerated and if there be a
complication of pneumonia
or bronchitis there will be
considerable acceleration.
The temperature is high
in the evening and falls
in the morning. It begins
to rise about noon and
attains its maximum be-
tween 7 P.M. and midnight
and then it begins to fall
and is at its lowest between
6 and 8 A.M. There is gen-
erally a difference of 1° to 2°
between the morning and
evening temperature.

In making [illegible] the temperature would range from 102°, 103° — 104° and [illegible] the second week [illegible] to fall. But in [illegible] the temperature [illegible] to 101°-102° in [illegible] and [illegible] [illegible] [illegible]

[illegible]

Diagnosis –

From Intermittent fever by the gradual approach of the usual symptoms and by the absence of vomiting &c.

From Typhus fever –

"In Typhus the thermal and cutaneous excitation, the pulse, bulk and [illegible] [illegible] [illegible]

"[illegible] Typhoid [illegible]
[illegible]
[illegible] Countenance
purplish red, [illegible]
[illegible] characteristic, [illegible]
very [illegible]" — Prof. Miles says
"the diagnostic point in Typhoid
fever is the alternate [illegible]
rise & morning fall of the
temperature without any local
cause —

Prognosis —

In ordinary
cases the patient will recover
under proper treatment, but
[illegible]

[illegible] there is always a history of the skin having [illegible] which was [illegible] followed by a [illegible] pustule and [illegible] [illegible] [illegible]

such precautionary measures
as will avoid the the possibility
of any one coming in contact
with the Typhoid germs.
All feces should be properly
subjected to some antiseptics
such as Condyx fluid, Carbolic
acid. Chlorinate of Lime or
Chlorine water before they are
thrown in to the sewers.
All sraphins should be pure-
fied before they are laid away.
All improper drainage should
be immediately attended to and
care should be taken to prevent
the drinking water or the water
that is used for [illegible]
[illegible]

[illegible]

[illegible]

[illegible]

[illegible]

[illegible]

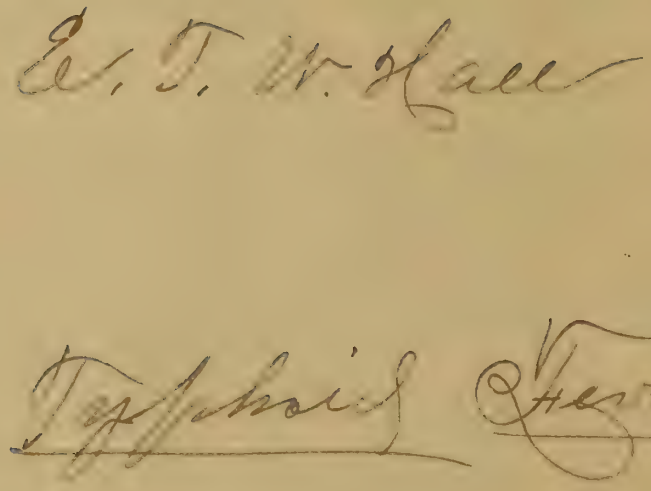
we can hope to do no more than
to support the vital powers by
aiding nature and by treating
the symptoms as they arise
until the disease has [illegible]
its course. To reduce the fe-
[illegible] Salicylic acid or
actual refrigeration.
Prof. Miller does not [illegible]
[illegible] giving large doses of [illegible]
[illegible]

In pieces of the vital pressure,
where the temperature exceeds
104° begin with water about
10° below that of the body and
leave the patient in the water
until the thermometer indicates
the temperature is sensibly re-
duced or until the patient be-
gins to shiver and show signs
of a chill. Cold or warm water
& sponge is good to sponge the
body with to reduce the pressure
The condition of the bowels
must be watched and if the
passages exceed two or three in
twenty four hours, must
be restrained by some an-
tiseptic [illegible]

If the bowels should be constipated never use drastic purgatives but give mild laxatives such as castor oil, Epsom salts &c and even this should not be used after ulceration has taken place but give an Enema. Hemorrhage from the bowels should be restrained by use of Ergot, Tannic acid, Turpentine & when it occurs during the first eight or nine days does not generally call for treatment. Special attention should be given

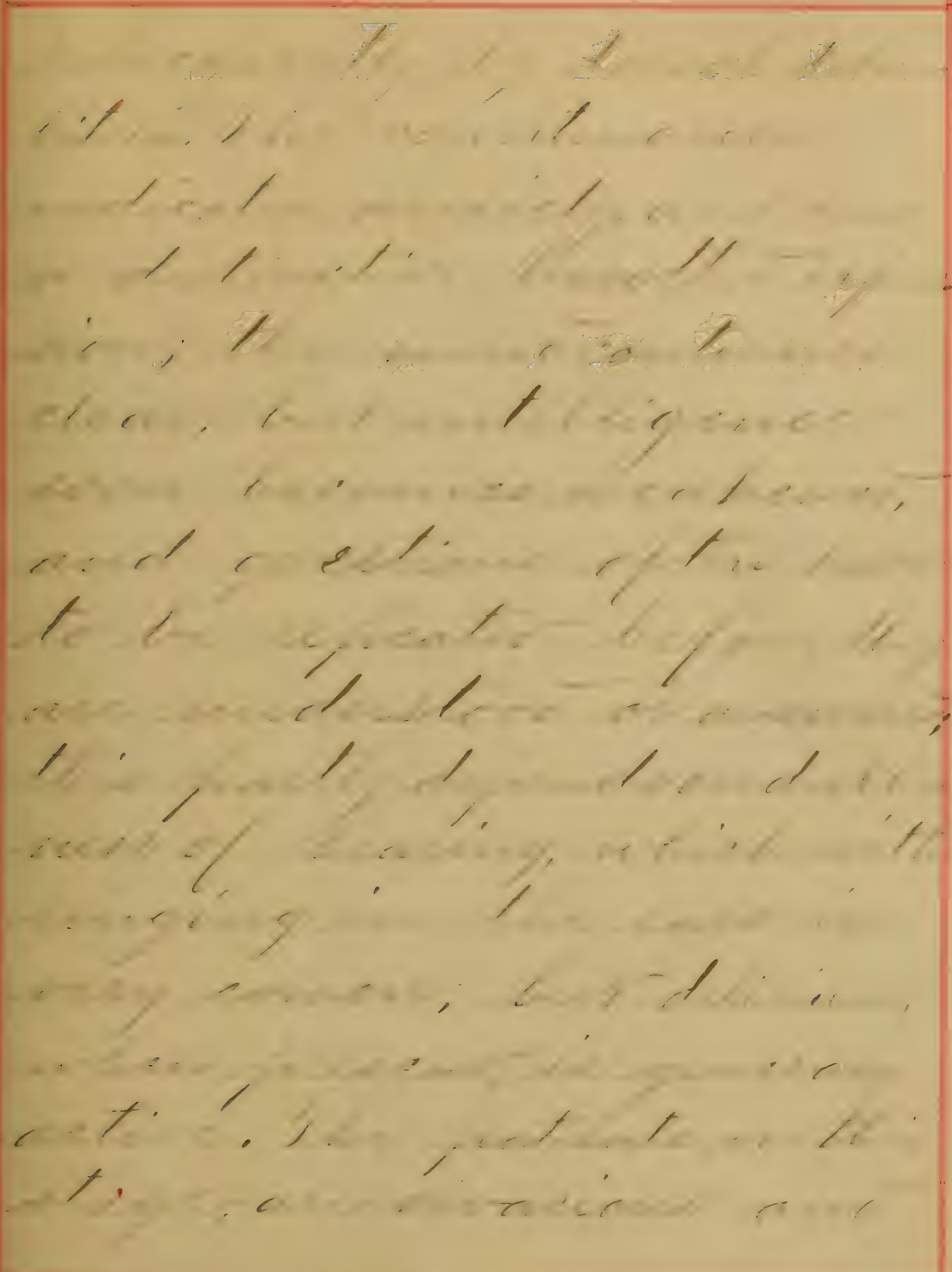
to the bladder, for it is [illegible]
[illegible] distended and the
[illegible] is decided by their
bring a continual [illegible]
of [illegible], when it is retained,
draw it off with a catheter.
To avoid perforation of the
bowels do not [illegible]
[illegible], check drowhea and let
the bowels be at rest as
much as possible. Relieve
sick stomach by [illegible]
lime water, sinapism on
the stomach or a [illegible]
powder. When the symptoms
of perforation are present
keep the patient perfectly
under the influence of opium

preferably by [illegible]
The thing to be kept in
mind above all others
in the treatment of Typhoid
fever is the diet. Not even
morsel of solid food should
be taken until all febrile
symptoms have disappeared.
It should consist of a stimu-
-lating and easily digested
nutritious fluid such as
milk, gruel, barley water
rice water and beef tea.
When there is a tendency
to collapse give stimulants.
It should not be forgotten
that perforation has taken
place several weeks after all



of the disease the diarrhoea
increases, the discharges being
for the most part liquid,
[illegible], of a [illegible] yellow
color. [illegible] of [illegible]
occasionally containing [illegible]
of blood. In reaction the
discharges are alkaline, and
containing a large proportion
of soluble salts and some
albumen. The fever may
terminate favorably by a
gradual restoration to health
during the fourth week.
The average duration of the
illness is about twenty-three
days; death in the majority of

as in malarious
s, or in pneumonia;
ne, the most characteristic
ering walk, or



rythmic contraction of the sterno-
cleido-mastoid and trapezius
muscles, and paraphrasis of the
pharynx. All of these symptoms
may lead to an error in
diagnosis; and it must be
acknowledged that there
is a good deal of analogy
between them and many
of the phenomena of cerebro-
spinal meningitis, and at
times, it must be owned, a
differential diagnosis is
difficult. However the expres-
sion of the face, is anxious
and betokening suffering
in cerebro-spinal meningitis.

resolved in typhoid fever. Typhoid is the most treacherous of all diseases, and it may be confidentially stated that no person can be considered as fit for active work, for three or four months after an acute attack of typhoid fever. This is of great practical importance to be constantly alive to the fact that no necessary connection exists between the intensity of the general symptoms of the disease and the extent of the intestinal mischief which may supervene, or the absolute danger

1 [illegible]

[illegible]

[illegible]

[illegible]

[illegible]

[illegible]

[illegible]

[illegible]

[illegible]

[illegible]

[illegible] ulcer. Although [illegible]

[illegible] infiltration [illegible]

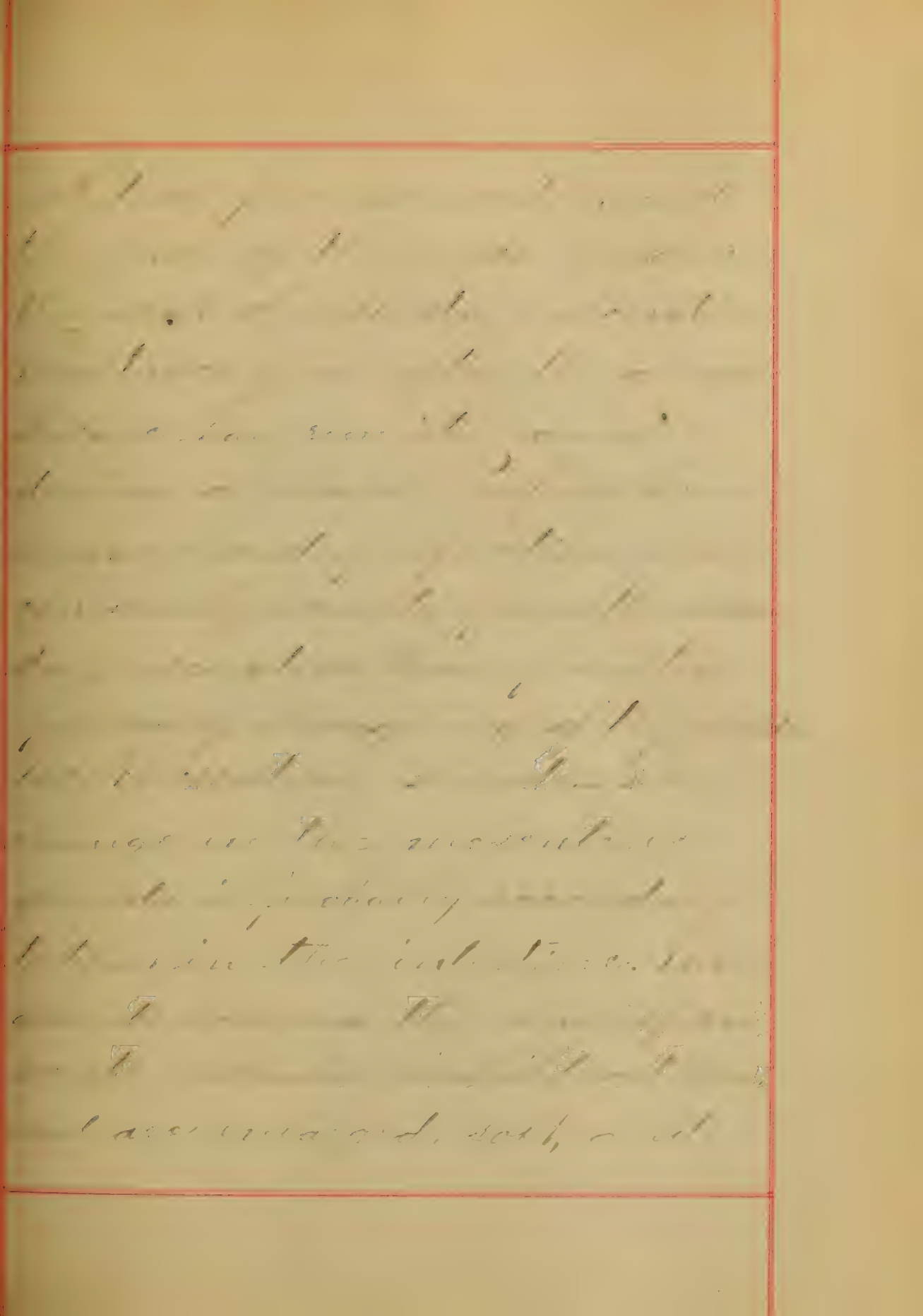
[illegible]

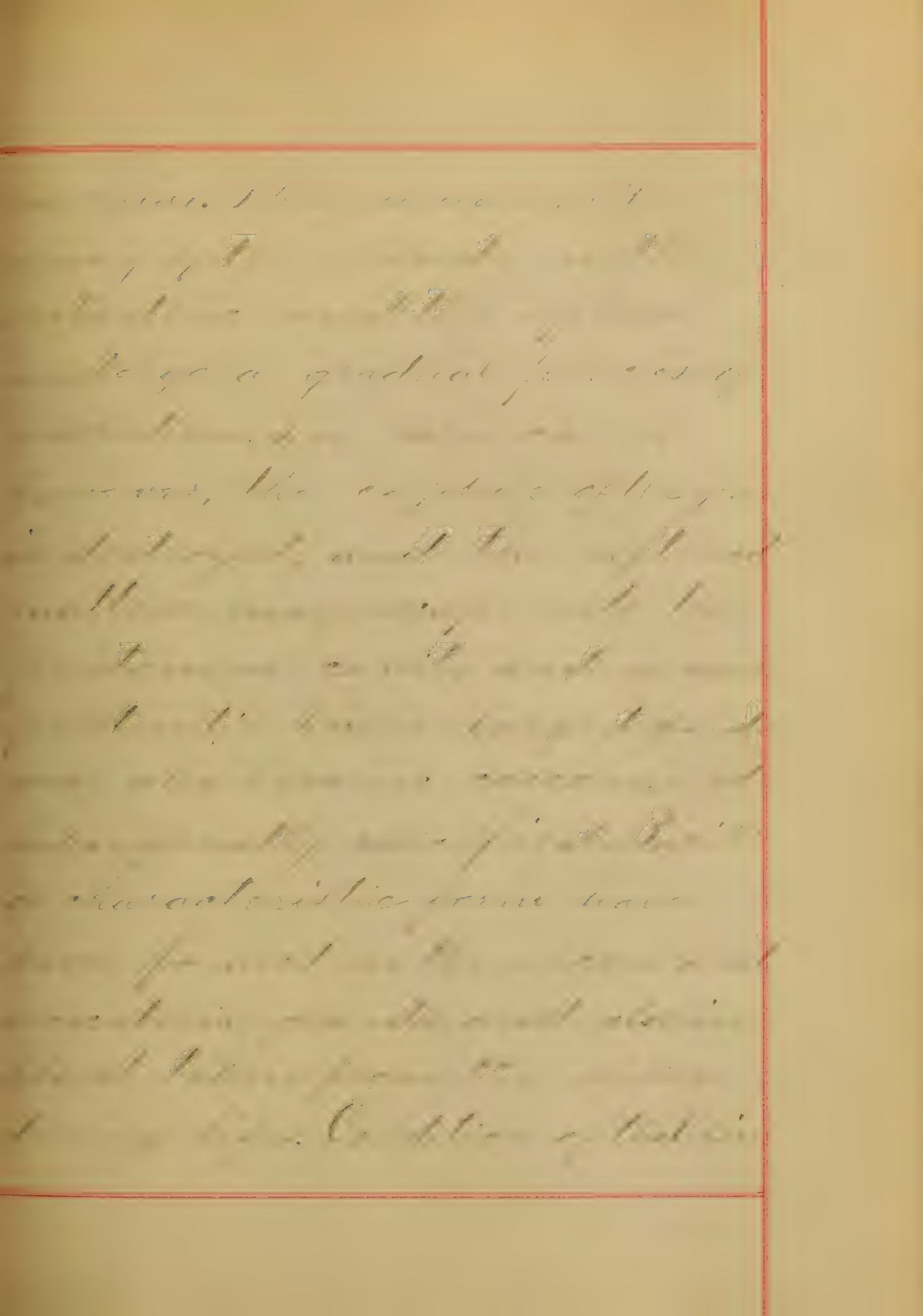
[illegible] the case

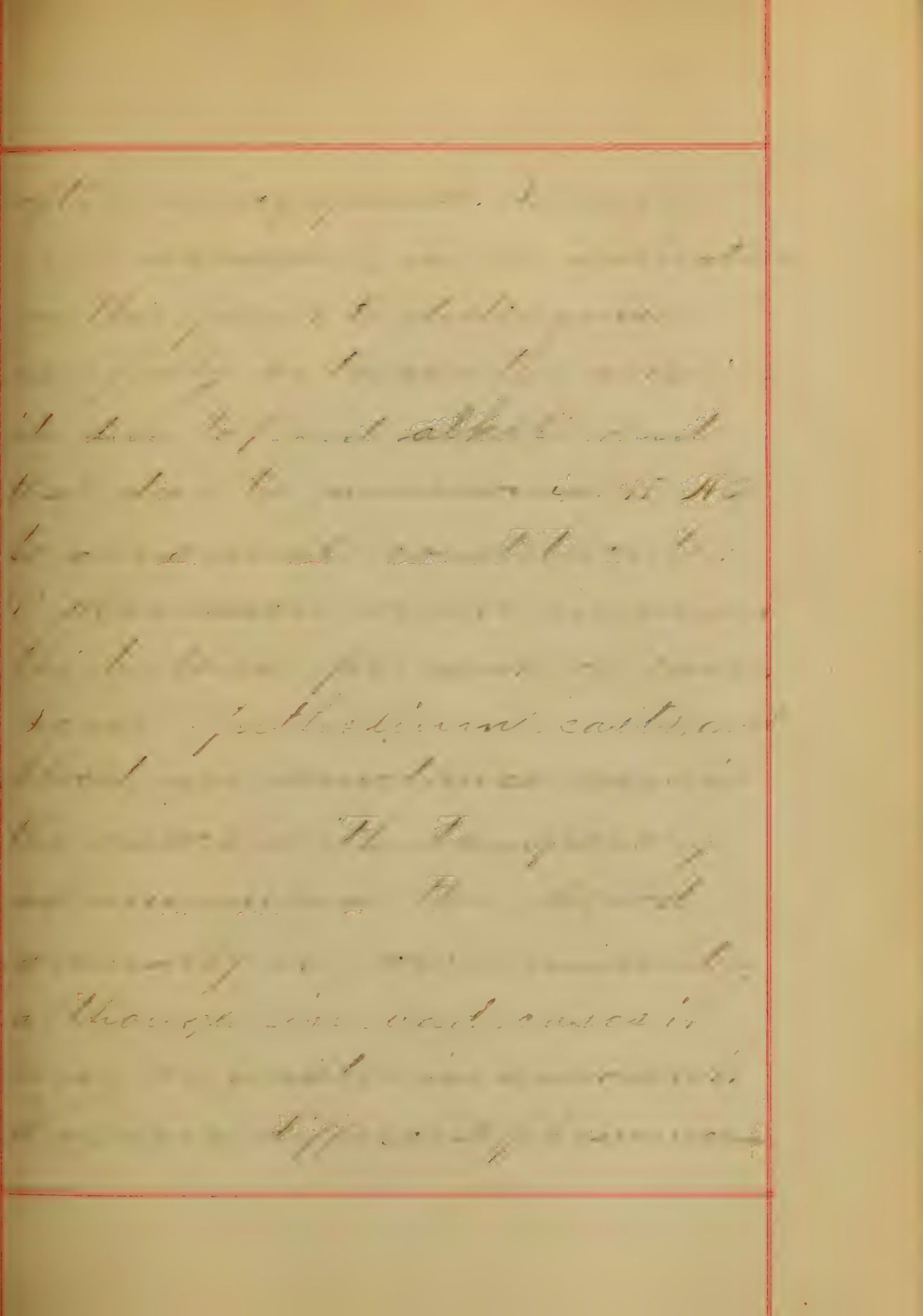
[illegible] the ulceration. In case

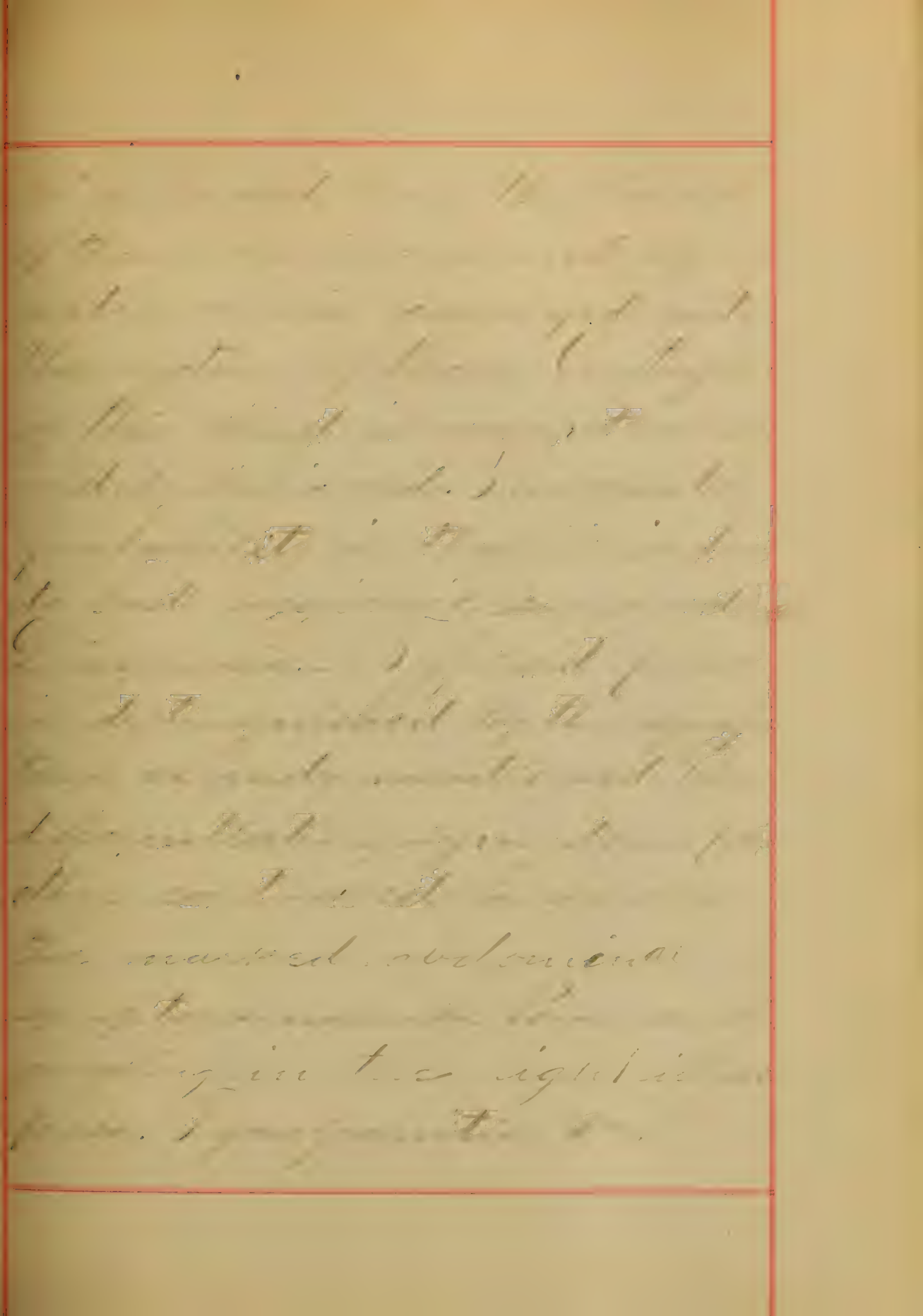
[illegible]

[illegible] of the [illegible]









Urine in Disease

by

Edwin F. Turner.

-1885-

"Urine in Disease"

In selecting the above it is not my intention to go into the minutiae of the subject but briefly to point out those changes which interest us most and which in assisting in diagnosis will so much direct us in applying remedies to the underlying causes. It would seem to be a law of nature that the constituents of organized bodies only continue to exist by virtue of perpetual change.

of uninterrupted decomposition and removal. Accordingly, we find that of all the food consumed from day to day by men, no more remains within him than the small amount by which he increases in size and weight during the period of his growth. Now that so much more is taken in than is necessary for the growth and nutrition of the body, and that the constituents of the body are constantly breaking up and being decomposed, we see the necessity of excretory organs by

which this refuse matter
may be cast-out. Of these
the most important are the
Respiratory and Urinary.
As we are considering the latter
it would be advisable to give the
anatomical outline
As compound of different organs.
The principal are the kidneys
which secrete the urine. The
adjuncts to these are the ureters
which convey it to the bladder
The bladder for the reception and
accumulation of the urine,
and the urethra as the excre-
tory duct to the outer man.
The kidneys have a shape

peculiar to themselves, are convex on anterior posterior and outer surfaces and concave on inner surface. They are two in number, found in the back part of the abdomen behind the peritoneum, situated in the lumbar regions, each kidney extending from the chorneth rib nearly to the crest of Ilium; the right being a little lower than the left in consequence of the large space occupied by the liver. Each kidney is about four inches in length, two in breadth and one in thickness. A kidney presents two distinct

parts the outer or cortical portion surrounded by the capsule, and the inner or medullary portion which latter is arranged in large conical masses. The Pyramids of Malpighi internal to the medullary portion is the pelvis composed of the helium and sinus or properly the expansion of the Ureter. The cortical portion is of a reddish brown color soft granular and easily lacerable. It is found every where immediately beneath the capsule and forms the whole circumference of the kidney beginning at the periph-

parts the outer or cortical portion surrounded by the capsule, and the inner or medullary portion which latter is arranged in large conical masses. The Pyramids of Malpighi internal to the medullary portion is the pelvis composed of the helium and sinus or properly the expansion of the Ureter. The cortical portion is of a reddish brown color soft granular and easily lacerable. It is found every where immediately beneath the capsule and forms the whole circumference of the kidney beginning at the periph-

ary of the Hilum. It arches over each medullary pyramid and deeps down into the interspaces between them that part separating the sides of any two pyramids is known as the cortical column or Column of Bertini. It gives ingress to the arteries and nerves and egress to the veins and lymphatics.

The cortical structure is composed of convoluted and straight tubes, known as the tubuli Uriniferi, of blood vessels nerves and lymphatics, and also of numerous little red masses, "Malpighian Bodies". disseminia-

ted throughout the structure.
The medullary structure consists of pale red colored striated conical masses, numbering from eight to eighteen. The base of each conical mass or pyramid is surrounded by a cortical arch and directed ~~by~~ toward the circumference of the organ, while the apex covered with mucous membrane and containing several small outlets (the mouths of the uriniferous tubes), projects into one of the calices of the ureter. The apex is known as the mamillary pix. These pyramids are composed of arteries, veins, the looped tubes

of Spinal a large number of uniform
erous tubes and the connective
tissue or stroma of the gland
The Malpighian bodies are small
round masses about 1/25 m. in
diameter, and are found only
in the cortical structure of the
kidney. They are scattered through-
out the columns of Bertini but
are regularly disposed in double
rows in the cortical arches.
Each of these little bodies is
composed of two parts a central
glomerulus of vessels known as Mal-
pighian tuft, and a membranous
envelope. The Malpighian capsule,
which latter is a small pouch

like commencement of a uniform tubul.
The Malpighian Tuft or vascular glomerulus consists of ramifications of small blood vessels. The vessel entering the capsule forming the glomerulus is known as the efferent vessel. Those found in the cortical arches are arrived from interlobular arteries while those in the cortical columns spring from the arteriae propriae renales. The efferent or ext vessels pierce the capsule near the entrance of the efferent vessels. These vessels are not veins. Their contents is purer than that of the efferent vessels, for

they contain arterial blood sin-
nus the watery part of the urine.
These efferent vessels go to nourish
the adjacent uriniferous tubules, they
then break up into veins which
finally make their exit from the
kidney by the renal vein. The urinif-
erous tubules (1/100 inch in diameter)
have their commencement with the
malpighian capsule thus arising
they pass in a convoluted manner
throughout the cortical substance
and are known as the Tubuli Contorti.
The Tubuli Contorti are lined with
cubical epithelium which are
very thick in comparison to the
size of the tube here the solid cor-

stituents of the urine (urea uric acid &c) are secreted.) Then they suddenly become straight and smaller and dip down a variable distance into the medullary structure they then make a curve forming a loop. (The looped tube of Henle), and assuming near them original size return into the cortical substance here again they assume a convoluted course and together with those of the tubuli contorti which have not entered into loops, and in the straight or tubuli recti back of these straight tubes (the collecting or receiving tubes)

commences at about one line from the surface of the kidney by coalescence of one or more of the convoluted tubes above mentioned; passing toward the medullary substance it continues to receive on either side more convoluted tubes untill it enters a pyramid of Malpighi where it forms at acute angles receiving tubes similarly formed and finally terminates by an opening in the mamillary apex, emptying its contents (Urine) into the adjacent calyx.

The kidney is supplied with blood by the renal artery, which en-

[illegible] the sinus through the
hilum. Here whilst in the
sinus it gives off a few twigs
for the nutrition of the surrounding
tissues and terminates in
the arteriae propriae renales
which enters the kidney proper through
the Columns of Bertini. Two of
these pass to each Pyramid of Mal-
pighi running along its side for
its entire ~~[illegible]~~ length and giving
off as they advance the afferent
vessels to the Malpighian bodies
in the Columns of Bertini.
Arriving at the base of the pyramid
they make a bend in their course
and lie between the bases of the

pyramids and the cortical arches. here they break up into sets of branches which supply the remaining portions of the kidney. The first are the inter lobular set of arteries they are pro-cuff at right angles from the side of the arterial proprium vessels looking toward the cortical substance and passing directly outward between the pyramids of Ferrein they supply the capsule. In their outward course they supply the afferent vessels to the Malpighian Bodies which terminate in the glomerulus. It is from the tuft of vessels that the watery [illegible]

of the urine is secreted after circulating in the Malpighian bodies they make exit and are known as the renal efferent vessels which vessels go to supply the adjacent Uriniferous Tubules thus the Urea + C is secreted by the large cubical cells which line the Tubuli Contorti. The second set, arteriolar rectae, is for the supply of the Medullary Pyramids entering their bases and passing straight through their substance to their apices they terminate in a venous plexus. The Renal Veins arise from these sources. The veins beneath the

capsule, the plexuses around the Tubuli Contorti, and the plexuses situated at the apices of the Pyramids of Malpighi therefore the Renal Vein which passes through the Hilum and empties into the Vena cava Inferior. The nerves of the Kidney are small and about fifteen in number they have small ganglia developed upon them and are arrived from the Solar Plexus. The lymphatics consist of a superficial and deep set which terminate in the Lumbar Glands. The average quantity of urine expelled by a healthy adult in twenty four

hours is from thirty to forty fluid ounces the quantity may vary in either direction. The ordinary range of specific gravity is from 1015 to 1025 the extreme range will be from 1005 to 1030. The reaction is acid.

Composition found on next page.

Average composition of Urine.

Water	167.00 to		940.00
Urea	15.00	"	23.00
Sulph. Sodii. Kali & lime	3.00	"	7.00
Chloride Sodii	2.00	"	8.00
Phosphate Sodii	2.50	"	4.30
Urate Sodii Ammonia Kalli,			
Lime and Magnesia	1.00	"	1.60
Creatine & Creatinine	.60	"	3.00
Lactate Kalli & lime	.50	"	2.60
Ammonia Magnesium Phosphate	.50	"	2.40
Muriate Ammonii	1.50	"	2.20
Traces of various ingredients.	3.40	"	5.90
	1000.00		1000.00

The proportion of urinary constituents per fluid ounce varies. The estimates given in the table below are

roughly approximative and up
resent the widest variations con
sistent with normal conditions
the variations always considerable
are particularly marked as regards
the Uric acid.

		grs		grs
Acid		6.50	to	10,50
Chlorine	.30 to 3.60 grs of NaCl	.80	"	2,15
Sulphuric Acid	1.30 to 3.20 grs of Sulphates	.[illegible]		,[illegible]
Phosphoric Acid	2.10 to 4.[illegible] grs of Phosphates	1.17	"	2,25
" "	combined with Potassium et Magnesium	.78		1,[illegible]
" "	combined with earthy lime and Ammonia Magnesium	.39	"	.83
Uric Acid	[illegible] to 70 grs of [illegible]	.23	"	.40

Having examined normal urine we
will now examine into some of its
changes. First we will take
a short insight into "Brights" as this

is one of the diseases in which the changes are so conspicuous. Testing for albumen lies at the bottom of all diagnosis in Bright's disease. There is no form of kidney affection in the investigation of which we dare admit to determine the presence or absence of albumen. Further I am confident that even at the present day small amounts of albumen are not unfrequently overlooked in hasty examinations. When large quantities of albumen are present in urine its detection is most easy. The addition of from 5 to 30 gths of acid, - nitric is commonly used - is preference

of urine in a test-tube will promptly precipitate the albumen if much is present. (A more delicate test is to put some acid (3j to 3iij) in a test-tube and then allow the urine to trickle slowly down into the acid. If a very minute quantity of albumen be present, you will see a white layer at the junction of the urine and the acid. Nitric acid also yields a delicate test for albumen but there is one objection if the patient has been taking Quinia the urine will have an albumen-like reaction with the acid. So when

using this test always be sure the patient has ~~been~~ ~~taking~~ taken no [illegible] recently. If the urine is acid in reaction the albumen is promptly thrown down by boiling; then if, after boiling, a few drops of acid be added, the solution of any phosphates precipitated by the heat is secured; while any albumen which may have remained in solution because the original urine was alkaline when boiled, will be thrown down. It should not be overlooked that unless a considerable amount is present. Albumen is not precipitated by heat from an alkaline

solution. It is the small amounts of albumen which escape attention and it is to this that I would especially direct attention. Many who have often tested urine for albumen by the ordinary heat and acid test will have observed that after boiling the clear urine and adding a few drops of Nitric acid the resulting fluid will be apparently clear but upon setting aside the urine thus treated until the next morning there will sometimes be a small deposit. If the urine has been carefully filtered before testing this

deposit is either, acid urates, uric acid, nitrate of Urea or albumen. All however except the albumen will disappear on the application of heat.

Urinary or tube casts are moulds of uniferous tubules and should be studied in connection with albuminuria. But it would be out of place to give a description of them in this short thesis. I will only say that the worst forms of Bright's is accompanied by the formation of tube casts of different varieties and that the kind of cast will often assist us in making our diagnosis

There are many diseases in which albuminuria plays an important part as a complication or sequela or as both. So in every disease a physician should examine the urine from time to time and at the first appearance of albumen promptly pursue the appropriate treat. One of the most dreaded sequelae of Scarlet fever is lesion of the kidneys with impending albuminuria. In this disease we should be most careful that the patient be not exposed to the vicissitudes of the weather for several weeks after the primary trouble has disappeared, as simple exposure

some times predisposes to albumi-
nuria even in healthy persons
Depth theirs may also be the cause
of albuminuria and may cause
much trouble unless the attending
physician is delegent and always
on the alert to battle with such
enemies of the human race. There
are many other lesions which have
in their connection albumen in
the urine but as my time is
short I will now have to say a few
words about other changes
Diabetes is a name which strikes
terror to those upon whom it has a
firm hold. The essential morbid
factors here are that the urine

is voided in larger quantities than normal, and contains more or less sugar or saccharine matter. This like albuminuria is a symptom rather than a disease. The changes in the urine has caused this disease to be classed under two heads. 1 Diabetes Insipidus. characterized simply by a superabundant discharge of limpid urine of the usual urinary taste. 2. Diabetes Mellitus. here the quantity of urine discharged in twenty four hours is somewhat in excess, encountering to 20 or 30 pints each pint containing about two ounces of saccha-

rine matter. his saccharine matter seems to replace the urea as that is not found in quantity in those laboring under diabetes. Post Mortem dissections have met with no morbid appearance by which we are enabled to fix on the seat of this distressing affection. It is not a very common disease any where but would appear to be more frequent in some countries than others. Excepting the injuries to the nervous system which are known to cause diabetes, our knowledge of its cause is not precise. we know that blows upon the head or in fact

blows upon any part of the body injuring the nervous system directly or by sympathetic inflammation may be followed by diabetes after a ~~longer or~~ shorter or longer period. Nervous diseases, acute or chronic mental emotion and anxiety — especially when combined with bodily fatigue and exposure all predispose to this change in the urine. I may also mention that constant use of certain kinds of food and alcoholic stimulants are among its causes. Changes in the urine are the most characteristic symptoms of the trouble.

The most noticeable peculiarity to the patient is the enormous quantity passed. As much as seventy pounds has been known to be passed in twenty-four hours. Of course such enormous quantities as this are exceptional; from twenty to one hundred ounces is the usual quantity. The quantity passed is governed to great extent by the amount of fluid ingested. The most important change is the presence of sugar of this the quantity varies in different patients, and at different times in the

same patient. Every case of trifling and temporary glycosuria should not be considered diabetes, for sugar may be found in the urine, in small amounts and at different times (as result of other troubles) in persons who are far from the desire when finding small amounts of sugar without other characteristic symptoms, we should not condemn a patient before we have fully (by thorough investigations) been convinced that the dreaded trouble exists. As a rule the specific gravity of diabetic urine

is above normal if the reading is high as 1040. As the urine increases in quantity so it decreases in color. It may become so very pale as to be almost as colorless as water. This clearness will diminish upon exposure for the sugar contained will set up fermentation and develope fungi which will produce a cloudy or smoky color when the urine is fresh voided its odor is natural but it soon assumes an acetous odor in consequence of the fermentation setting up. As a gen-

eral thing is deposit to its place at first but coincident with the fermentation Uric acid and other deposits are generally thrown down. The amount of Urea is almost always increased, while the uric acid seems to be slightly diminished in amount — Diabetic urine as before pointed out — is generally of high specific gravity — and pale in color but these two phenomena would not justify us in making a diagnosis of sugar contained more reliable test — must be

resorted to — of these that known as Trommer Test — is about the best — We first take a few drops of a 3% solution of Cu SO_4 add to this some of the suspected urine, then to this solution add a little liquor potassae, (say about as much as would be equal to half the volume of the first solution) now heat this mixture to the boiling point — and if sugar be present — a copious yellow precipitate — of hydrated cupric subroxide to the plan. There are several other tests, — but the above is reliable and about —

as good as any I might say that the fermentation test is untill or by many. Albuminuria and glycosuria are the most important changes that interest the average practitioner. There are various other changes but when compared to the above they are of minor importance. Much more might have been read on the subject but this short thesis will not admit of it. Having that I have pointed the principal changes I will close and submit this thesis to the Faculty of the University of Md.

Edwin P. Turner

Thesis of M. V. B. Shupe.

Subject,
"Classification of
The Tissues of the Human Body."

Classification of the Tissues of the Animal Body.

There are five elementary tissues, which go to make up the animal body. Viz.,
First, Embryonic or Lymphatic Tissue.
Second, Connective Tissue, Third, Muscular Tissue, Fourth, Epithelial Tissue.
Fifth, Nervous Tissue.
The tissues comprising Embryonic, Connective, and Muscular tissue as well as the tubular elements of the nervous tissue and part of the Genito Urinary apparatus, are derived from the Mesoblast.
The members of group fourth, Epithelial tissue, are derived partly from the Epiblast and partly from the Hypoblast and some little from the Mesoblast.

Members of group Fifth

Nervous Tissue. The part constituting the Cerebral spinal System are derived both from the Epiblast and Mesoblast.

The Tubular nervous elements were mentioned as belonging to the Mesoblast, whilst the ganglionic elements and most of the nerve terminations of special sense are derived from the Epiblast.

We have then coming from the Mesoblast, Embryonic Tissue, Connective Tissue, Muscular Tissue, part of the Genito Urinary tract and the Tubular elements of the nervous Tissue.

From the Epiblast, Mesoblast and Hypoblast. The Epithelial Tissue

From the Epiblast alone, the

ganglionic nerve elements and most of the nerve terminations.

These are the present views held in regard to the Hystogenesis of tissue, but as the three layers of the Blastoderm shade gradually into one another, it is impossible to give with absolute certainty the derivation of some of the tissue.

Again the Mesoblast owes its origin to the Epiblast and in some of the lower animals the Mesoblast does not exist.

Kind of Embryonic or typical structure.

An Embryonic structure is one that remains unchanged throughout the whole life of an individual, or a life history of a

certain growth, with the exception of inflammatory products, which may undergo some modification.

The cells of any and all of the members of the lymphoid group are identical with the white blood, pus, mucus, lymph, chyle and connective tissue corpuscles, and the wandering connective tissue cells.

Motion, contractility and appropriation, being in structure identical with certain varities of Protomaeba.

Lymphoid cells all multiply by division, and the nucleus generally includes the larger part of the bulk of the cells.

Only a small portion of the protoplasm of the cells being visible.

some times the nucleus fills the whole cell, thus giving it the appearance of a non-cluciated granular cell,

None of them have a cell wall. Pigment cells are either of Lymphoid or Epithelial origin.

Embryonic structures may be sub-divided, Those having a fluid intercellular substance, and those having a solid intercellular substance.

We have the embryonic cell occuring in four different forms, viz. The Round Cell, this is original and most common form,

Spindle Shaped Cells. These are simply elongations of the round cells due to pressure. They resemble smooth muscular cells.

The Stellated Cells. These are

further modifications of the round cell, the latter having two and three or more prolongations from the cell body, due to the amaboid movements.

Giant cells, these are made up of a mass of protoplasm containing many nuclei which have apparently not divided into single cells.

Lymphoid structures are made up of one or more of the above named cells.

The cells being commonly imbedded in an intercellular substance, which may vary in consistency from a semi-liquid up to a distinct delicate areolar connective tissue.

Pathologically the lymphoid cells

have great significance when found out of their normal position.

When met with in decided quantity in any structure where they do not belong. They signify inflammation.

In diagnosis histologically the solid lymphoid structures, they are best divided into two groups.

Group (A) Those having blood vessels with distinct walls.

Group (B) Those having blood vessels without distinct walls or the latter being obliterated.

In first of group (A) Capillaries without distinct walls are met with every where. The meshes of this group are always made up of round cells.

Lymphatic Glands. These are

a uniform picture of absolutely round equal sized cells, very little connective tissue stroma is seen unless taken near the capsule.

Thymus Gland, In the smallest lymphoid cells, resembling closely the lymphatic glands, contains a distinct alveolar stroma of loose connective tissue which gives it a tubular appearance.

Very frequently there are associated epithelial cells.

Sometimes (more common in man) the epithelial element multiply and arrange themselves concentrically like pearls which gives an appearance not unlike that of epithelioma.

Marrow of Bone. In young animals it resembles lymphatic glands, unless blood vessels are infected, but ordinarily it is recognized by the prominence of fat vessels, which are more numerous in direct proportion to the age of the animal.

Spleen. Here we have the bands of fibrous tissue intermingled with a large amount of smooth muscular tissue. These bands travel the structure in all directions.

Malpighian bodies are seen which are only more dense, somewhat conglomerate of the lymphoid cells around the arterioles.

Transverse sections of the trabeculae of the muscular tissue should not

closer net work,

[illegible]

1. Simple Connective Tissue [illegible]

ces. (a) Areolar Connective Tissue,

(b) Intercellular Substance,

(c) Fibrillar Connective Tissue

(d) Yellow elastic tissue.

(e) Endothelium.

The [illegible] and the cutis are made up largely of the areolar tissue, each being intermingled with yellow elastic tissue. The areolar connective tissue is the sole birth place of Adipose tissue.

An overgrowth of circumscribed is called [illegible] Bromus. If diffused [illegible] of the cutis it gives rise to Elephantiasis.

An overgrowth of areolar tissue

[illegible] forms of Cirrhosis or Sclerosis.

(2) Inter-cellular substances. This may be semifluid or solid. Under high power it [illegible] to that [illegible] in cells. It is a product secreted by the cells, and before reaching maturity may again give rise to cells by way of fibrillation.

(3) Fibrillar Connective Tissue. Sym. White Fibrous Tissue, this tissue is formed from cells by elongation and fibrillation of the latter, and also fibrillation of the inter cellular substances.

occurs in thin delicate

straight or slightly [illegible] fibers [illegible] bundles which are covered by endothelium and areolar tissue, which support them.

The tendons are built up of this kind of tissue, and in combination with yellow elastic tissue it forms [illegible] covered by endothelium and in combination with both areolar and yellow elastic tissue, it forms the cutis, mucosa, periosteum, and perichondrium.

An overgrowth is called Hard Fibroma, [illegible] nothing else than small fibroma.

(2) Yellow Elastic Tissue [illegible]

[illegible]
[illegible]
[illegible]

It forms the sarcolema and neurolemma, capillary lymphatics and capillary blood vessels.

Compound Connective Tissue Substance.

This is formed from a near connective Tissue. The cells (or the meshes) being distended with fat, it may be found in all places where areolar connective tissue exists, except in the Penis, Scrotum, Nymphea Ear, Eyelids and Neuroglia.

A circumscribed overgrowth is called a Lipoma. Fatty infiltrations may occur in epithelia cells as in the liver.

Mucous Tissue. This is an imperfectly developed areolar tissue; the meshes of which is infiltrated with mucin and overgrowth

is called a Myxoma.

(3) Cartilage. This is formed from embryonic cells. There are four varieties of cartilage.

(1) Mucous Cartilage.
(2) Hyaline "
(3) Fibrous "
(4) Reticular "

(4). Bone. A compound connective tissue substance originating from cartilage impregnated with lime salts. An abnormal overgrowth is called Asteoma.

(Group 3) Muscular Tissue. Muscular Tissue is of two kinds, viz., smooth or unstriated involuntary and striated or voluntary.

Smooth Muscular Tissue.

The elements of this tissue are spindle shaped cells of various size without cell walls, having spindle shaped nuclei and the protoplasm of which has become converted into muscular fibrin.

2 Striated Muscular Tissue.
All muscles are striated which contract between fixed points. Is composed of long fibres which run parallel to one another without anastomosing. They present a transition from the smooth muscular. Being in the embryo, also at first spindle shaped.

Chemically the smooth and striated are the same, each containing Myosin, the

coagulation of which produces Rigor Mortis

Epithelial Structure.

The epithelial cell is originally, like every spherical cell, but adapts itself to special locations and functions.

It assumes three chief forms, viz, the Columnar, Squamous and Spheroidal.

The nuclei of the epithelial cell is as a rule small compared with bulk, being the reverse of the lymphatic cell.

Epithelial cells have also a distinct wall (except in deep seated young cells) and for this reason do not undergo the amaetoid movement.

They probably multiply only by endogenous cells.

formation not by division,
They vary much in size.
The office of epithelial cells is to manufacture and secrete mucus and absorb nutriment for tissue and to protect the body from external injurys.
The spheroidal and columnar more especially for the first two and the squamous or pavement for the last. Either variety may have cilia, the office of which is mainly protection and assistance.
Simple Epithelial tissue have no blood vessels.
Situation of Epithelial cells.
Ciliated Epithelium is found in all parts of the air passages, except the smallest bronchi,

air vessels and vocal cords.
It is found also in the eusta-
chian tubes, labyrinth and
tympanium of the ear.
The lachrymal sack and ducts,
the fallopian tubes, the uterus,
the seminal vesicels the vas de-
ferens, the epididimus the
cerebro spinal canal and in
some portions of the ventricles
of the brain.

Non ciliated columnar epi-
thelium in a single layer
is found most commonly
where ever active secretion and
absorption are going on.
In the skin where protection
is still more needed, there is
an addition to the columnar
syrramous cells layer on layer

of dead horny cells at the top.
Columnous epithelium is found every where in the skin and mucus membrane and in all the invaginations of the latter.
But according to necessity it may or may not be covered with layer of squamous.
In the kidneys there is no squamous except in the pelvis. Also the uterus, bladder and female urethra.

Epithelium lines all surface communicating with the atmosphere, and there are only four epithelial structures which have no communication with the outside.
The supra renal capsule, cerebro spinal canal, thyroid gland, and Hypophysis and the [illegible] gland of the brain.

Normally in every case the epithelium or a part of it rests on a basement membrane. Epithelial cells form useful harmless tissue if they remain above this general basement membrane or are bound into a fine encapsulated mass (Liver) but they destroy the body if they break through this basement membrane and getting loose travel into the lymph spaces of the tissue, into the inner man, thus producing carcinoma. The variety of the epithelium of a locality determin usually the variety of an epithelial growth. There are no specific cancer cells.

There is a direct relation of the form and shape of the epithelium to the blastoderm layers

from which it originates.

The Epiblast gives rise to all the stratified pavement or squamous epithelium. Its office is protection only. It also gives rise to the protective variety of ciliated epithelium (as the nose and ear) and to such ciliated cubical epithelium as is of unknown use, as in Spinal cord and Brain.

The Mesoblast gives rise to epithelium which is always cylindrical or Polyhedral and always unstratified, whose office is only to excrete products not used in the body (as the kidneys, testicles, ovaries &c.) or the assisting cilia, as in the Uterus, Fallopian Tubes, Vas deferens, Epididymus.

The Hypoblast gives rise to

Epithelium usually non-stratified always cylindrical or cubical in shape.

All Hypoblastic epithelium or its [illegible] are vitally useful in the economy and are used up in the body its self.

Subject. Typhoid Fever.

Enteric or typhoid fever. abdominal

Definition. A febrile disorder characterised by an inflammatory affection of the agminated and solitary glands of the intestines: gastro intestinal disturbance and a peculiar rash.

Causation and history:

Enteric Fever is a disease of world wide prevalence and occurs for the most part in an endemic form though it may occur as an epidemic. It attacks both the people of towns and of the country: sex has no influence over it. It occurs in both old and young but it is claimed that a large majority of

the cases occurs in those under the age of twenty-five as old age advances cases become less frequent. The disease prevails chiefly in the months of August September October and the mortality is generally at its minimum during March April and May. It seems to be a general belief that its prevalence is increased during hot weather and lessened by prolonged cool weather. And that people going into countries where Enteric fever is endemic are more liable to have it than those who reside there. It is generally admitted that Enteric fever is not in the usual sense of the word contagious.

That it is not necessarily from
any person to another by the
breath or touch and that attend-
ants on a patient rarely take
it from him. It seems to have
been proven that Enteric above
all others is the fever of local
decomposition and that it owes
its origin chiefly to such influ-
ences as bad drainage, foul and
overcrowded cesspools, cesspits
by which persons are so situated as
to have forth their fetid gases in-
to the interior of houses or to
endanger wells by their emana-
tions, water and other articles
used for food. Whilst it has been
said that the patient does not

throw off the infectious germs with the breath from the stomach it seems that there is some infectious material thrown off with the fecal matter which is at this time uninfectious but after it undergoes a state of decomposition it becomes highly infectious and may contaminate wells and such other things as it may come in contact with: hence in this way cause an outbreak of the disease. It is certain that a patient going into a community that is uninfected with the disease may cause an outbreak. It seems that the poison is introduced into the system

from the alimentary tract and these are regarded as the points of [illegible] infection.

Symptoms and Progress.

The mode of the attack and initiatory symptoms of Enteric fever are very various. In exceptional cases they are as sudden and well marked as in cases of Typhus. But much more commonly it comes on so insidiously with undefinable feelings of malaise or slight feverishness or loss of appetite and strength or some degree of gastro-intestinal disturbance that the patient is unable to fix the date of his illness. During the early part of the disease the patient

usually suffers more or less with the following symptoms: Irregular chills and flushes of heat increased frequency of pulse with elevated temperature: thirst, loss of appetite with morbid nausea or vomiting of the tongue: headache or heaviness of the head: tendency to drowsiness during the day, wakefulness at night: restlessness and dreams with these symptoms are often associated epistaxis, vomiting and diarrhoea with pain in the right iliac region. These though sometimes absent are often the first and most striking of the symptoms: during the first week of the disease the

symptoms gradually increase though the patient may not be confined to bed usually in the beginning of the second week the symptoms become more fully developed and become more characteristic The fever reaches its acme. The skin is usually hot and dry but liable to break out in perspirations. The pulse still increases in frequency and also the respirations. and not unfrequently there is some cough. The tongue may remain clean or become coated with a moist fur but generally it gets dry and presents transverse cracks in

the diarrhœa. The vomiting usually subsides by this time. But anorexia and thirst continue. And there may be soreness of the throat giving rise to pain on swallowing. The patient sleeps badly and occasionally delirium comes on mostly at night and between waking and sleeping. It is about this time that the rash appears. It consist of lenticular rose coloured spots distinctly elevated and disappearing on pressure and tender to the touch. They are rarely numerous and appear in successive crops reaching their full development

and disappearing in three of four days. Thus spots of various ages are usually present at the same time. In a great many cases no spots appear; in others they vary in numbers greatly. They usually appear on the back abdomen, and chest sometimes on the face and extremities. At this time but the intestinal symptoms become pronounced. The abdomen is more or less tumid. Pain more particular in the right iliac fossa, and you may get a gurgling sound on pressure. The bowels become loose discharging liquid yellowish stools that has been

likeness. To pass through from this condition the patient may gradually recover but in a large majority of cases he passes in the course of the second week into the typhoid condition. The elevation of temperature continues, the rash still comes out and the diarrhoea persist. The pulse becomes quicker and more feeble. tongue becomes brown and presents deep fissures. The lips and teeth become encrusted with sordes and general prostration increases. Sleeplessness. The mind grows dull, drowsiness and delirium supervene. and bed sores tend to form. Blood is not unfrequently passed

with the stools. Finally if the case is going on unfavorably tremors subsultus and involuntary evacuations come on: and the patient passes into a state of coma and death supervenes. If on the other hand the case is likely to do well convalescence sets in usually in the course of the third or fourth week. The change is usually quite gradual. fever abates, diarrhoea stops cerebral symptoms pass off. the pulse falls appetite returns and strength reappears. The progress of convalescence is always slow. Occasionally when convalescence is fairly started. relapses occur

accompanied with the pulse and all the other symptoms. The foregoing rules apply to ordinary cases of uncomplicated cases. But there is probably no other disease that varies as much in its course as typhoid fever. The pulse though generally accelerated may present great variations. In some cases scarcely above the normal during the whole course of the disease. In some reaching as high as 140 beats per minute & remaining there even below normal 40 or 50 per minute. It is generally quicker in the evening than in the morning. The respirations

are generally accelerated during the advance of the fever and greatly aggravated in such complications as Bronchitis and Pneumonia. When the surface gets dusky and the local symptoms of complications appear the tongue may remain normal or it may become coated with a thick dry brown fur, or present any variation between the two. It is most commonly however covered with a brown fur except at the edges and presents a dry glazed appearance with brown fissures on its surface.

thirst and loss of appetite are always present. Sickness is one of the initial symptoms. Diarrhoea is most always present. Sometimes in the beginning but usually comes on in the second week. There is usually more or less abdominal pain and gurgling in right iliac fossa with tenderness. In the early part of the disease the urine is scanty high colored with high specific gravity. There is an increase in urea and uric acid and diminution in the chlorides later on the urine becomes more copious and specific gravity lower.

Albumen sometimes appears
in the second week. The
bowels are usually flushed after
meals and during the febrile ex-
acerbations. The skin generally
by becomes moist after morning
and during convalescence
is subject to copious perspira-
tions. The fever is of remittent
character presenting morning
remissions and evening exac-
erbations. The rise commences
on first day and continues
by daily waves until third or
fourth day when it reaches a
height of 103°. 106 degrees and re-
mains until about the twelfth
day when if the case be a mild

one it gradually declines and convalescence commences. If the case be a severe one the fever remains high & there be complications the symptoms are changed accordingly. Profuse diarrhoea epistaxis intestinal hemorrhage and collapse all cause the temperature to fall, much of the danger arises from the complications. Some of the most important are hemorrhage, perforation of the bowels, peritonitis bronchitis and pneumonia. Hemorrhage may take place at almost any stage of the disease perforation about the third week, peritonitis is one of the

most frequent causes of death. There is probably no other disease in which death is threatened from so many quarters. It generally takes place from asthenia, asphixia or coma, or a combination of these and may happen at any stage of the disease. The disease can generally be distinguished from Typhus fever by the insidiousness of its invasion. Weakness and successive development of the nervous & cerebral symptoms, and a great many other minor points, might be pointed out.

Morbid Anatomy.

Enteric fever is always attended

with characteristic lesions of the solitary and agminated glands of the intestines and the mesenteric glands in direct relations with them. These lesions consist in hyperplasia of the glands in virtue of which they undergo rapid enlargement and then gradually subside or become softened and suppurate or become gangrenous. The microscope shows an increase in the number of lymphoid cells and sometimes giant cells with them. The morbid process seems to begin with the first symptoms of the disease. The intestinal lesions may be

limited to a few glands or to all of them and the deeper tissues. These gradually swell and present a tumid margin are sometimes softer but more generally denser and more friable than natural. They generally attain their full development about the ninth day and then subside or ulcerate. The latter process may commence at the top or side or the patch may slough in the whole of its extent at once. The resulting slough soon becomes separated from the rest of the tissues by a line of demarkation and is cast off.

generally about the twentieth day. The resulting surface is generally even with smooth floor and thick edges. sometimes the floor consist of peritoneum only. Cicatrization generally commences about the third week and is completed in a week or two more. but from various causes may be delayed. These ulcerations are generally most numerous about the ileo caecal orifice. and rarely extend to the upper part of the ileum or to the transverse colon below. The cicatrices rarely cause serious contractions. Perforation takes place only through those that have dis-

burying the deep tissues. In some cases where the floor is formed by the peritoneum a peritonitis is set up and causes adhesions and in this way prevents perforation. In a large majority of the cases perforation takes place in the lower two feet of the ileum. The mesenteric glands connected with the lower part of the ileum enlarge with Peyer's patches from the beginning they sometimes attain large size and at the end of a week undergo resolution or soften and suppurate. They may induce peritonitis by extension of inflammation or by rupture

into the serous cavity. The spleen is enlarged and if the patient dies during the ulcerative stage the contents of the bowels are pea soup like and the bowels distended with gas. It has been pointed out that numerous micrococci are found in the intestines and glandular enlargements. The other morbid processes will vary with the complications.

Treatment.

Knowing the means by which the poison gets into the system it becomes one of the first duties in the treatment of Typhoid fever: nor is it difficult

To adopt precautionary measures against the contamination of water and atmospheric air, and the exposure of patients to such contaminated media. If a patient be under treatment for evacuations, and all articles of dress soiled by such evacuations should be well disinfected before removal from the room with carbolic acid, chloride of lime, or some other good disinfectant. All communications between sewers and the interior of houses should be entirely cut off. Water closets and drains should be kept clean and well ventilated.

All waters that have been exposed to contamination should be looked upon with suspicion and if such waters found to be used they should be thoroughly boiled and it must not be forgotten that milk may be the means of introducing the poison into the system. after being diluted with poisoned water. Articles of food should not be left exposed in the sick room. In short the laws of hygiene should be strictly enforced. The therapeutical agents that have been used for the cure of the disease are numerous. Some enticing the

mineral acids, antiseptics as chlorine, hyposulphites, carbolic acid and creosote. Some place great confidence in Iodine. Others mercury. Some remedies are employed for the special object of reducing temperature, as Quinine, salicylic acid and the like. We have no specific for the disease as for malaria, and perhaps the various forms under which the disease presents itself has led to the employment of so many agents for its cure. Having had the care of several patients, and having seen during the last two winters other patients

that have been shown to be
clear by the professors. Things.
It is known is but little ex-
perience. still from the results
I am convinced that there is
no one line of treatment best,
but that it should be in the
main sustaining, and best
pathological conditions as they
arise. Thus if the fever be high
reduce it by such agents as
sponging, plunging, cold baths and
the like. If skin be dry and pulse
strong the nitrous powder. The
condition of the bowels are to
be watched and drastic purga-
tives should never be given.
If you have to give an agent

to act on the bowels it is better
to give castor oil, Rhenbarb, some
of the saline cathartics or enema
etc. If diarrhoea be present
to any great degree, it should
be controled by some such agents
as tannic acid, lead & opium, bis-
muth, sulphuric acid, and the like.
If it is slight it perhapse
does no harm, but is only an
effort of nature to get rid of
effete matters. If hemorrhage
occur measures should be ta-
ken to arrest it as Turpentine
tannic acid, Ergot, or other astrin-
gents. To avoid perforations avoid
purgatives, control diarrhoea
and maintain quiescence.

If signs of perforation [illegible] we
it is better to put the pa[illegible]
at once under the influence
of Opium. Tympanitis may be
benefitted by hot f[illegible]ntations
to the belly or stimulating
enemata. Sickness may be re-
lieved by ice, Bismuth, lime
water & milk and counter-ir-
itation. Pulmonary complica-
tions should be guarded against
by the maintenance of an eq[illegible]
ble temperature and avoidance
of draughts. When present they
are to be treated on general
principles. Keep patient clean
and dry, and relieve or obviate
pressure to prevent bed sores.

The diet should be fluid and easy of digestion. Given at short intervals and but little at a time. When there is tendency to collapse. Typhoid symptoms present or great debility. Stimulants are necessary. Much care is necessary during convalescence. The great debility which endures so long demands the use of tonics, and an abundance of nutritious food. But the liability to perforation of the bowels that exist make it necessary that the food be easily digestible, and not of such a character as to derange the action of the bowels.

and the general rundown condition of the system, renders it important to avoid all undue exposure and fatigue. Change of air is often beneficial.

C. A. F. Keen

All references taken from Bristowes, work on Practice Dr McSherry's lectures, and Bartholows, Materia, Medica.

"Digestion"

by

Jos. T. Hering

of

Maryland

1885

— Digestion —

Living matter is constantly undergoing interstitial change till living matter is composed of Protoplasm which has the property of taking in for its nutrition atoms in the form of food fixing those atoms in the form of tissue after they have been taken in and then, after they have served their purpose casting them off as excretions.

Thus we see that man and animals alike require for their sustenance certain materials to be taken into the body, and the nutritious particles fixed in the form of tissue, and finally the residue to be cast off.

act is the process of Digestion.
Digestion is therefore a chemical and physiological process by which food is changed by solvent fluids into a form capable of being easily absorbed and taken into the tissues of our body through the blood as a medium. To bring this about we must have an apparatus which when the various foodstuffs are taken into it are there acted upon by the different secretions, and placed in such a state that they can easily be appropriated to the wants of the body. This apparatus consists of the Mouth, the Teeth, the Salivary glands, Pharynx.

Oesophagus, Stomach, Intestines, Liver and Pancreas.

The Mouth is an irregular cavity bounded in front by the lips, on each side by the internal surface of the cheeks, below by the tongue behind it is continuous with the Pharynx but separated from it by a sort of movable curtain, the Soft Palate. In the Mouth we have the "Mill and the Mill feeder" namely, the Teeth and the Tongue. The Teeth in man are adapted for a mixed animal and vegetable diet. They have a general resemblance to each other with certain special characters in different part of the mouth.

The "incisors" or front teeth, eight in number, four being in the upper and four in the lower jaw. The incisors are more or less chisel shaped and are designed to cut. The "Canine" teeth, one on each side in each jaw, are immediately behind the incisors, they are pointed and sharp and are immediately followed by the two anterior "bicuspids" which are much thicker and stronger. Finally the three posterior "Molars" complete the dental arch. The "Molars" are the largest and strongest of the set. They are firmly planted in the jaw and their surfaces

present elevations, and shallow furrows, they are the grinders.
The teeth serve as the Mill, by which the food when taken into the mouth is properly masticated and placed in such a condition that it can be easily swallowed.
The Tonnage may be called the "Mill feeder", it pushes the food under the teeth until properly masticated, then forms a bolus of it preparatory to swallowing.
It is also the organ of taste. It is a muscular organ covered with mucous membrane, it is extremely movable and endowed not only with a delicate tactile sensibility,

of mucous membrane covered with epithelium and are found near the base of the tongue. The Fungiform are rounded elevations they are quite numerous, and are found all over the middle and forepart of the tongue and present a reddish appearance. The Filiform are the most numerous of all they are scattered all over the dorsum of the tongue except near its base these are the papillae that are so highly developed in carnivorous animals and serve them to scrape bones clean by licking them.

The Salivary glands secrete the Saliva which is poured into the

mouth by three pairs of glands,
the Parotids, Submaxillary and
the Sublingual. The Parotid glands
lie to the front of the ear, and
behind the descending Ramus
of the Inferior Maxillary bone
each pours its secretion into the
mouth through a tube known
as Stenon's Duct, which opens
opposite the second Molar tooth
of the upper jaw. The Submaxillary
glands lie between the lower jaw
bone near its angle, and pour
their secretion into the mouth
through their ducts which open
beneath the tounge near the mid
dle line. The Sublingual glands
lie beneath the floor of the mouth

between the back part of the tongue and the lower jawbone each gland has many ducts some of which open into the duct of the submaxillary while the rest open seperately into the floor of the mouth.

The Pharynx, or throat cavity proper may be considered as a conical sack with its base turned upwards toward the base of the skull, and with its apex turned downwards, opening into the oesophagus. In front it is imperfect having opening in it which lead into the nose mouth and through the larynx and trachea into

the Lungs. The Soft Palate is up
down between the mouth and
Pharynx at all times except
during deglutition, when it
is raised into a horizontal
position and thus prevents
food from passing into the
air passages. At the base or
root of the tongue over the open
ing of the Larynx is a plate of
soft cartilage the Epiglottis.
During deglutition the Epiglottis
is pressed down over the air
tube and helps to keep food
and water from entering them.
The Pharynx is lined with
mucous membrane

The Oesophagus begins at the lower termination of the Pharynx, and passing through the neck and chest ends in the Stomach. It is a tube consisting of three coats externally a muscular coat made up of two layers of muscular fibres the external layer consisting of longitudinal fibres the internal layer having fibres transversely arranged. The middle is the Sub-mucous coat consisting of areolar connective tissue. Internally it is lined with mucous membrane there is the internal or Mucous coat. The Stomach is the most dilated part of the alimentary canal serving for the solution and

thrown into folds. Upon close examination of this mucous coat we find it to be covered with minute shallow pits, into these pits open the mouths of the minute tubes of the gastric glands which are closely packed side by side in the mucous membrane, there being between them only a small amount of connective tissue a close network of lymphatics and capillary blood vessels. The whole surface of the mucous membrane is lined by a single layer of columnar epithelial cells. These cells dip down and line the tubular glands

[illegible] in the [illegible]
brane of the intestine itself. The
small Intestine is a convoluted
tube about twenty feet in length
it is divided into three parts, the
duodenum, the Jejunum, and the
Ileum. The walls of the Small In-
testine is made up of four
coats. The serous coat is [illegible]
from the Peritoneum. The mu-
cular coat consists of two layers
of fibres a longitudinal and
a circular layer. The longitu-
dinal fibres are thinly scatter-
ed over the surface of the in-
testine. The circular fibres
surround the cylinder of the
intestine. The Submucous coat

The small intestine receives not only
the secretions formed by the
glands embedded in its own mid-
dest tissue of the two large glands
that lie in the abdominal cavity
viz: the Liver and the Pancreas,
the ducts of which have a common
opening in the small intestine
a few inches from the Pylorus.
The Liver is the largest gland
in the body. It weighs about
three or four pounds. It is situated
in the right hypochondriac
region and extends across
the epigastrium into the left
hypochondrium. Its upper surface
is convex and directed upward
and forwards it is very much

and that coming through
the Portal vein. The Liver is
made up of polygonal masses
seperated by a capsule and the
polygonal masses are made up
of cells which are supplied
with both arterial and venous
blood. The Bile which is secreted
by these cells passes from the
cells through minute tubes
into larger and larger ones
until it reaches the main duct
These small tubes through which
the Bile passes have small
"diverticulae" all along their
coarse thus affording pouches
for the accumulation of bile
The Bile is formed only by these Liver

[illegible] [illegible]
[illegible] [illegible] [illegible]
[illegible] [illegible] [illegible]
[illegible] [

Digestive fluids and their use in Digestion.

We have five separate and distinct Digestive fluids viz. of the Saliva which is secreted by the Salivary glands.

2nd The Gastric juice which is supplied by the mucous membrane of the Stomach

3rd The Pancreatic juice which is secreted by the Pancreas and conveyed to the Duodenum by its duct

4th The Bile which is secreted by the Liver and also conveyed to the Duodenum by the common bile duct

5th The Intestinal secretions

its further solution, by wetting the food it also makes it more permeable for other fluids. Were it not for the solvent action of the saliva, the taste of many of the solid articles of food would be lost. It also aids in deglutition. It is of great importance in lubricating the tongue, thus enabling it to perform those most intricate movements which are requisite for distinct articulation.

In addition to these physical actions the saliva also perform an important chemical one viz that of converting starch into sugar. The saliva contains a substance called Ptyalin

The third stage is that in which the food is passed along the Oesophagus. Deglutition is voluntary until the bolus of food reaches the fauces, then by reflex act it is carried on down into the Stomach. This reflex act cannot be prevented after the food has passed the Fauces. Deglutition is the last or almost the last reflex act of life. The food passes into the Stomach through the Oesophagus by peristaltic action.
When it enters the stomach it there meets another solvent, the Gastric juice. The Gastric juice is secreted by the glands that are contained in the

oil & fats, all the mineral salts that
we take in with the food such as
Phosphate of Lime &c are insoluble
in water but freely soluble in
the Gastric juice. The Gastric juice
does not act upon the Starchy part
of the food, and as Ptyalin does not
act unless it is in an alkaline or
neutral fluid the activity of the
Ptyalin in converting Starch into Sugar
is arrested in the stomach. By the
solution of the various foods, by a
great quantity of Gastric juice
the food mass becomes reduced
to the consistency of a thick soup,
when it arrives at this state it is
called Chyme. After the food has
remained in the stomach for some

time the Chyme is passed into the
Duodenum in successive portions.
The Pylorus sphincter relaxes at inter-
vals and at the same time the
rest of the stomach contracts and
forces a part of the Chyme out into
the intestine. This is repeated several
times the larger undigested particles
not being able to pass the Pylorus at
first. The entire contents of the stomach
is disposed of in about two to three
hours after they have been taken
in.
When food is taken into the stomach
it excites by reflex action the
Pancreas and Liver to secrete
their thin fluids, [illegible]
when the food enters the Duodenum

It finds the Bile, and Pancreatic juice awaiting it.

The Pancreatic juice is a clear, nearly alkaline fluid, resembling in appearance the Saliva. It is secreted by the Pancreas or as the Germans call it, the "Abdominal Salivary Gland." The Pancreatic juice is far more important in digestion than the Saliva. It acts upon the Albumen very actively, but not so unless it be in an alkaline fluid. The peculiar principle in the Pancreatic juice that acts upon the Albumen and other substances is called Trypsin, which converts them into Peptones and Parapeptones. It also acts upon Rancheratic by immediately converting it into Sugar, which is readily soluble,

by the various glands of the small intestine. It is alkaline in reaction. Its special action is not satisfactorily known but it is supposed to act upon the blood fibrin and convert it into peptone.

Absorption takes place principally from the small intestine. The villi of the small intestine are covered with cylindrical epithelium. The upper end of each cylindrical cell is covered by a small cap. Each villi contain blood vessels and a lacteal. During fasting these lacteals look like small veins but during absorption they become enlarged and present a whitish appearance. All the alimentary substances together

with a little fat are first taken to the Liver then to the Heart, then to the Lungs and then to the general system except the most of the fatty emulsions they pass through the lacteals into the lymphatics. Absorption takes place by Endosmosis and Exosmosis, both fluids must be capable of wetting the membrane through which they are to pass. The blood-vessels absorb all those substances that are very fluid. Professor Miles believes that absorption takes place through the cells that cover the Villi and through the interspaces between the cells, and also through a Vital property of

the cells themselves. The large intestine has a remarkable power for the absorption of water.

Finally after most of the nutritious particles of the food have been absorbed the residue is carried on down through the intestines and cast off from the body in the form of faeces.

-Finis-

Diphtheria.

Is a specific contagious disease. Constitutional affection, evidence of an essential fever, a disease of antiquity described at the close of the first century of the Christian Era. by Aretaeus as a malady which occurred chiefly among Children. This affection has prevailed at times as an epidemic in different parts of the world from a remote period. Some writers have described it under a variety of names, such as. Angina Maligno, Angina grangraenosa, Malignant sore throat. Epidemic Croup. Et cité ra. Bretonneau. in 1821-25 & 26 applied to it the name of Diphthérite

from which originated the name of Diphtheria. the signification of which relates to the most characteristic local event viz.- the formation of a false membrane, has, to say the least, the negative merit of not involving any hypothesis concerning the pathology of the affection.

Age — Diphtheria is pre-eminently an affection of childhood the largest majority of cases occuring between two (2) and ten (10) years, under the age of one (1) year, the younger the child the less the liability of it being affected, it occurs rarely prior to the third month, cases infrequent after the middle of life.

life, and old age seems to possess nearly an immunity from Diphtheria.

Incubation — Diphtheria has an incubative period, which varies from one (1) to ten (10) days.

Nature — Causes — The frequent occurrence of epidemics of Diphtheria during the last Forty (40) years, and the great Mortality which has attended them, have awakened an interest in this Malady which has led to a careful study of its causes and nature, during the last few years a new line of investigation has been followed of experimenting on animals, the results being observed by the Microscope. Those who have

have taken the lead in this new field of investigating are, Oertl, Buhl, & Pereter of Germany. This discovery is so important from promises which it gives of the results of future research, that a brief statement of the facts in refference to it cannot fail to be interesting at the present time when Diphtheria is so prevalent and fatal in this and other Countreys. The minute objects which the observers alluded to, have discovered in patients affected with Diphtheria, and which they suppose, cause the disease, are endowed with life and motion. They belong to the class of ~~Microf~~ Microscopic vegetable parasites which

which have been designated Bacteria. The Bacteria have been divided by Cohn into four genera with species, but only two of these, it is thought, sustain a causal relation to Diphtheria. Namely the Sphero-Bacterium or Micro Coccus and Secondly the Rod like Bacterium or Micro Bacterium. In every tissue which is the seat of Diphtheritic Inflammation, and in every Diphtheritic pseudo-membrane, the Sphero Bacteria occur in immense numbers the Micro-Bacteria are not near so numerous. As the symptoms of Diphtheria become more grave the Sphero Bacteria increase in numbers. They are found

found in the discharges from the edges of the wound produced by the operation of Tracheotomy performed for Diphtheritic Laryngitis. upon these edges they multiply rapidly just before a Pseudo-Membrane is formed. In the commencement of Diphtheria, the grayish white spots which appear upon the inflamed consist entirely of these Bacteria with epithelial cells and mucus, while fibrin and pus appear at a later period, as a result of Inflammatory reaction. Various experiments were made by Oertel, Hueter, Nasseloff and others, in order to determine more fully the exact relation of the Sphero-Bacteria and Micro-Bacteria, to Diphtheria.

The mucous membrane of air passages, the Cornea and muscles in animals, are inoculated with Diphtheritic matter, and these two kinds of Bacteria are found to increase rapidly, penetrating the tissues in a short time, and infecting the system. Eberth inoculated the Cornea with Diphtheritic matter, and found that the Staph. & micro-Bacteria penetrated its layers, causing within a few days intense Keratitis and death of the animal by injection of its blood. They fill the blood and lymph vessels, and in a mechanical way damming up of the fluids, and as a consequence serous Exudation. As the vessels close up stagnation is

the consequence, inducing disturbance of nutrition in the walls of the capillaries and may rupture them. Experiments inoculated the Cornea with a negative result, using for the purpose Diphtheritic material from which the Bacteria had been removed or separated. The importance of such experiments cannot be too highly estimated. In the opinion of those who have performed them the conclusion is inevitable that Diphtheria is produced by Bacteria, which, coming in contact with the mucous membrane, or the cuticle deprived of its Epidermis adhere to it, and there multiplying rapidly.

burrow through the tissues and entering the vessels will affect the entire system, the reason assigned why Diphtheritic inflammation in most cases appears primarily and chiefly upon the Faucel and Nasal surfaces is that the air, which contains the germs constantly passes over these surfaces, and, as to the fauces, the ingesta also, which may contain them. The causes and nature of a disease cannot, in general, be fully elucidated by experiments alone, such as have been detailed, they should be aided by clinical observations and of these there has been abundance in

New York the last twenty (20) years.
Two distinct propositions are included in the Bacterian theory, viz., That Bacteria causes Diphtheria, Secondly, that this disease is at first local and afterwards becomes constitutional by the entrence of specific principle into the blood. Whether Diphtheria is primarily local or primary constitutional or is in some at first local and in others at first constitutional, is a distinct proposition from that regarding the relation of Bacteria to the malady; and whatever the truth may be in reference to the one does not affect the other, Diphtheria

Diphtheria is a local malady in its commencement in most instances occuring from lodgment of the Diphtheritic poison at some point upon the mucous membrane, or upon the skin denuded of its epidermis, or upon an open sore, when Diphtheria has a local commencement, infection of the system occurs by absorption of some of the poison through the absorption of the capillaries, or absorbents, or both, which connect with the seat of the disease upon the surface. Cellulitis producing tumefaction along the neck are of importance they show the poison has entered the lymphatics infecting

infecting the system. The Diphtheritic poison occasionally enters the lungs in Inspiration and thence infects the system. Examinations have been made of the lungs from children who died during the first day affected with Diphtheria, under the microscope Bacteria were observed in the bronchial tubes, no false membrane seen on any of the mucous surfaces. Diphtheria is generally classified among the Acute infectious diseases with Scarlatina and Rubeola, it often occurs in secondary as well as a primary form, in Putrid & Typhus Fever, Scarlatina and Rubeola the mortality is greatly increased

increased with the complications of Diphtheria. the primary form predominates during epidemics of Diphtheria and the secondary form in the intervals or during Scarlatina and Rubeola, the preference of its locality is upon exposed surfaces where the Epidermis is denuded, and in the Fauces, conditions which favor the occurrence and spread of this malady. impure air, poor diet, lowered vitality; Et ceti ra, Diphtheria though so often communicated from person to person not infrequently occurs "De novo" in localities where the conditions are favorable for its development. and where it prevails

prevails as an Epidemic or Endemic.

Anatomical Characters - The characteristic feature is the presence of a false membrane. The fauces in the vast majority of cases is primarily affected and in a certain proportion of cases, the local affection is limited to this situation, the first appearance is redness of the fauces, dryness and fulness in the throat giving pain if requested to swallow, flushed face, hot and dry skin, occassionally headache and nausea, the Pseudo-membrane at first thin and Semi-transparent, soon becomes opaque and is more or less thick.

It is white or ash colored, but may become very dark due to decomposition and imbibition of blood; again it may be colored by remidies and matters vomited. Diffent cases diffe. in the extent of the affection with in the fauces if the fauces be inspected it presents a bright red color limited to one or both tonsills and the tonsillar region. The redness begins to abate between two to Six days the color of the patches changes to gray or even black the false membrane when thick, loose, and dark or black presents an ulcerated or gangrenous appearance, which is implied in some of the—

names formerly given to this affection, The pseudo membrane is often firmer in one part than another, the outer a central portions being more compact and tough for a time than that underneath which is more recent and in which there is less fibrillation, After a few days decomposition commences, and than that which was first formed becomes softer than the more recent production, when this occurs the Exudation changes from whitish to a dirty brown or grayish color. If the pseudo-membrane be detached, in a few days it is not infrequently followed by a second or fourth attack or formation

formation of a false membrane, In
mild cases of Diphtheria the disease
manifests itself locally in the throat
alone, but in cases of more or less
severity and danger the Diphtheritic
affection occurs in other situations.
The anterior and posterior nares, on
one or both sides, may be affected,
The Eustachian tube is occasionally
involved, the mucous membrane
of the cheeks and gums, are coated
with pseudo-membrane, it may af-
fect the Oesophagus, Conjunctiva &c.
and prepuce, it is more serious when
it extends into the Larynx if
the exudation occur below the
Larynx or air passages we have the

the phenomena and result of True or Diphtheritic, when it affects the nares it is attended with the discharge of thin mucous and pus; this is not dangerous except in nursing children in whom it interferes with lactation, the discharge produces excoriation around and upon the upper lip, the danger of Septicemia depends upon the severity of the disease, if inflammation be severe and the exudation causes obstruction of the bloodvessles in the Mucous Membrane and ulceration occur, if death occurs from obstruction of the air-passages the lungs will be found reduced in

size and of a pale color from lack of blood, especially the anterior superior portions while the posterior and inferior portions have a dark red color the difference is due to a false membrane, in the air passages receiving partial explanation from the seat of the exudation in the bronchial tubes, for those who perish from obstruction in the air passages the exudation is found chiefly in such tubes as pass to the posterior and inferior parts of the organ while such as pass to the superior and anterior lobules remain free from it.

Sequela — The sequelae of this disease form an important part

of the clinical history. The blood is altered being deficient in red corpuscles and the excretion of Albumen from the Kidneys increases the impoverishment of the blood, feebleness of the heart's action sometimes exists to such a degree as to lead to sudden death from syncope, probably being due to the paralysed condition of the heart. during convalescence we have occasionally paralysis of the voleritary & sometimes of the involentary muscles, the muscles of the Palate and Pharynx are most frequently affected if aliment be taken it passes back through the nostrils and cannot-

be swallowed until several efforts have been made and it frequently happens when deglutition is performed that some of the food or liquid taken passes into the larynx producing violent coughing, the paralysis may affect the tongue and face so as to make articulation very difficult, it is not only limited to the muscles of the mouth and face but may affect the Extremities which are affected gradually and preceded by tingling, Numbness, and sensation of coldness, there is often not a total loss of sensation or of motion in the paralyzed part but there is numbness with great difficulty rather than —

irresponsibility of motion. The special senses are liable to be affected, more especially the sense of sight, vision may be affected by paralysis of the internal rectus muscles causing strabismus. Aside from this the most frequent form of disorder is amblyopia which is corrected by the use of Convex glasses, sometimes it is the form of Myopia corrected vice versa to Amblyopia, the other special senses, taste, smell, hearing are sometimes affected.

Pathological Characters — Diphtheria is a constitutional disease, and as such as other constitutional diseases it is an essential morbid condition —

supposed to involve blood changes, the nature which remains to be ascertained, the symptoms designating it as constitutional, precede the occurrence of diptheritic inflammation. The constitutional disturbance is often out of proportion to the local manifestations, Diptheria has been considered by some as identical with Scarlitina, The Efflorescence which occurs in nearly all the cases of the later will distinguish it from Diphtheria. Scarlitina is developed rapidly and Diphtheria often gradually in Scarlitina there is not such a tendency of extension of inflammation within the Larynx as in Diphtheria.

Diagnosis.— In a vast majority of cases the diagnosis of diphtheria is easily made if the case has continued for six or eight hours, if the fauces is inspected the pseudo membrane may be observed. To distinguish Diphtheria from Pseudo-membranous Laryngitis is sometimes difficult though in the later affection there is as a general rule swelling of the glands along the neck accompanied with Coryza, Liability of Error has been referred to as confounding it with cases of Pharyngitis & Laryngitis and the exudation which accompanies the later affections. The distinctive points have been stated under the

head & Anatomical Character.
Albuminuria is common in Diph
theria and rare in Pseudo membranous
Laryngitis, & scarlatina there is also
inflammation of the Fauces with
exudation but Diphtheria is readily
diagnosed from Scarlatina the later
affection beginning with vomiting
and the presence of Efflorescence, occas
ionally the two affections attend the
patient at the same time which
makes the Diagnosis more difficult.
Treatment. — Local & General.
Our first efforts in treating Diphtheritic
affections within the fauces should
be local as we all know that -
Diphtheritic Pseudo-membrane contains

the specific virus and the air which passes over it will become impregnated with the poison, prompt and attentive treatment of the fauces and air passages should be applied. Local Treatment should not be applied as it formerly was, Namely, Solid stick of Nit. Silver, Hydrochloric acid, Sulphate of Copper, etc, etc, in strong and irritating solutions, cauterizing and irritating applications which have been in use heretofore in this disease, and practitioners confined themselves with soothing and Antiseptic remedies which should be applied in such a manner as it may penetrate the pseudo-membranous

as to touch the surface underneath. The nares should be carefully syringed out every three or four hours with a weak solution of Chlorine, Chlorate of Potassa, Carbolic acid, Salicylic acid et Borax, &c. with the spray douche a stream of vapor can be nearly constantly kept playing on the parts; careful washing of the affected parts is necessary afterward there should be thoroughly dusted over the affected region Iodoform Sulfur, which is accomplished by an insufflator. The application of Aqua Calcis, consists essentially in the inhalation of the vapor, as it arises from the slacking of lime. Applications as the following are considered as very efficacious in

the early stage of Diphtheria, applied by a Camels hair pencil.

℞ Carbolic acid gr. ij ℞ Monsels Solution ℥ij
Glycerinae ℥j Syr. Simplic ℥ij
Aqua Calcis ℥j M.
3 Spray Creasotum gtt xx M.

Or One Teaspoonful of the following every 1 2-3 hours as the case may require

℞ Chlorate of Potas ℥iij
Ts. Chloride of Iron ℥ij
Acid Carbolic gtt vij
Glycerinae ℥iss M — Or —

℞ Vini Antimony ℥ij
Hydrarg Chlor Corros gr. i
Ammonia Muriat ℥ij
Glycerinae
Aqua aa ℥ij
S- ℥j every 2 hr. M.

mild astringent applications may be employed with advantage such as Tannin with Glycerine. The Hyposulphite of Soda has also been used, a gargle of above salts ℈ iij. Aqua ℥ x Glycerine or simple syrup Q.S. To be used every half hour, The great object of treatment is to support the system, endeavoring to keep patient alive until the career of the disease is ended. The diet should be nutritious and unirritating. Animal broths, Milk, &c. &c. Tonics are almost universally used by the Professional such as Sulphate of Quinia & its alkaloids. Tinct. of the chloride of Iron. Salicine has been used with very good results.

The Alcoholic Stimulants are also efficacious when patients become prostrated and the disease causing patient to be liable to die from asthenia such as Brandy, Sherry, Madeira, Spts. Mon. &c. &c. Symptoms incidental to the disease claim palliative treatment. Vomiting is relieved with the administration of Hydro. acid. Bismuth or Creasote. Diarrhoea astringents, & Opium. Cataplasm with Bismuth, for restlessness Bromides Camph. Tinct Opii, Hydrate of Chloral &c. The rules with respect to Tracheotomy should be thoroughly observed, this being the last resort in the treatment of Diphtheria.

The Hon. the Faculty of the University of Maryland" will please accept this as a Thesis from a student from Texas under the instructions of The Hon. Faculty of Maryland University 1883-1884-1885.

G. Milton Fitch

Thesis by H. C. Conley

Circular Pneumonia

I have carefully perused the writings of most distinguished and close observers of this disease, both of the past and present, and note the prevailing opinion held by these various writers,

Each one as you are well aware, in treating of any particular disease, [illegible] by facts, or rather what seems to be students to be facts and circumstances connected with the disease, and by comparing these facts upon the [illegible] of cause and effect [illegible]

We know such to be the case
and do not feel disposed to accept
any one man as authority,
when we have undoubted evidence
of many, equally able and scientific
as he, in our Profession,
Therefore I propose to base my
conclusions upon the facts and
evidence derived from the diff-
erent writing that have come
with in the [illegible] range of
my Medical Literature, by a Process
of reasoning and Elimination,
and by accepting those that
appear to be the most plausible
This disease as its name
implies Tuberculous Meningitis
signifies inflammation of the
Meninges of the brain together

with deposition of tubercles.
Some writers designate and
locate the inflammation
and tuberculous deposit
to certain parts of the
Cranial Cavity, but from
observation the appears to
be no means correct.
Inflammation was attacked
not only the meninges of the
brain, but the brain substance
as well as the convexity and
base. Nor did it escape the
notice of the older Pathologists
that the deposit of tubercles or
granulations as they termed
them, were not confined to the
Cranial Cavity; for they mention
the disease as associated with

a scrofulous or granular diathesis.
Modern investigations have
confirmed these statements and
[illegible] may not be confined
to any particular part of the
body but found in various parts.
In the majority of cases (Post Mortem)
appearance of the brain shows the
ventricles to be distended with
serous effusion which may
be clear, or moderately opaque
from the presence of white blood
corpuscles. This effusion seems
to have confused the early
writers, for to Dr Wright are
we indebted, for first accurately
describing the disease under the
title dropsy of the brain, therefore
under this name Hydrocephalus

[illegible] have until
lately been confounded; one consist-
ing essentially of an accumulation
of fluid in the cranial cavity
independent of inflammation,
the other characterized by real
inflammation and often devoid
of effusion. M. Guersent, in 1807,
adopted the name granular
meningitis to designate those
cases in which the granules
existed in connection with in-
flammation, and taught that
the patients were consumptive
dying through the brain, but
it did not appear to him or other
pathologists at the time that
the granules were tuberculous
or the cause of meningitis,

Anatomical characters.

The Pia Mater affords the most unequivocal signs of the disease by presence of the brain which gives it a rosy appearance. A fine purulent exudation — [illegible] is often found in different parts of the brain, the amount varying in different subjects. The fine vessels are sometimes very whole injected, the [illegible] being empty of their blood giving the brain an appearance not unlike painter's putty. An excess of clear serosity sometimes turbid is met in the Pia Mater, meshes, convolutions and filling the ventricles of the brain; in proportion to the amount of fluid in the ventricles the convolutions

are flattened. Tubercles as grayish yellow granulations may be seen in numbers along the course of the vessels of the Pia Mater, and the membranes of the lateral region of the brain and even in the brain substance. The number of tubercles do not seem to bear any proportion, to the intensity and extent of the inflammation; tuberculosis of the lungs, liver, Solar, lymphatic glands, and Choroid of the Eye, concur with the disease in the brain. The tubercles are often isolated, but sometimes grouped in patches, in various ages; sometimes only four or five can be detected, and then alone with the microscope. At other times they

may be seen in countless [illegible]
[illegible] average in size from a
grain of sand to that of [illegible]
and [illegible] are to be
seen, the size of a filbert, [illegible]
the aggregation of [illegible] smaller
ones,

Symptoms

The symptoms of this disease as
of other diseases are not essentially
the same in each and every
individual, Many of the symptoms
which are present in number one
may be wanting in number
two. The symptoms which are
characteristic of the disease.
may be ushered in suddenly with
out any warning, upon what has
so far seemed to be state of perfect

[illegible] In the majority of cases
it would appear that the true nature
of the disease, or the development
of inflammation, is preceded for
an indefinite length of time by
symptoms of deranged and altered
health. It may attack a [illegible]
who has exhibited signs and symptoms
of acute, general, or local tuber-
culosis. A child may be affected
with dry cough, occasionally for
emaciation, paleness, loss of spirits
and notable disorder of diges-
tive organs, namely: irregular
appetite, diarrhoea, or constipation,
the latter being the rule. It
sometimes becomes so obstinate,
as to yield with difficulty to
active medicines; loss of flesh

[illegible] to be the most constant
precursor; the child is drowsy
by day, in bad humor, and restless
by night, [illegible] and
desires to be let alone.
During this premonitory stage,
the symptoms which are fairly
pronounced when the disease be-
comes fully established, may
be wanting or manifested only
in a slight degree, namely
headache, and occasionally vomiting.
The symptoms are grouped
together in every possible manner;
others not mentioned may
be present & many named
absent. When the disease
becomes fully established vomiting
is the most common symptom.

[illegible] [illegible] [illegible] [illegible] [illegible] [illegible]

disturbed or weakened presents an expression of despair, idiocy or intoxication. Towards the termination [illegible] may arouse [illegible] signs of [illegible] as regards intelligence &c which may lead the [illegible] or friends — to hope for [illegible], but soon the patient relapses into the former state, convulsions and rigidity, [illegible] vision, dilatation and suggestion of the pupil follow with paralysis of the muscles of different parts of the body, slight twitching movements of the [illegible], and laterally respiration, Rigidity of the muscles in rare instances, [illegible] so extensive that the body seems

[illegible] by hands and feet without tending. Delirium may be present. Stupor becomes more profound and patient insensible to all external impressions.
The mode of dying is by Apnea and Asthenia [illegible].
As regards duration, the greater number of cases succumb during the [illegible] third [illegible] all though death may take place sooner or be longer delayed.

Diagnosis

In making the diagnosis it is to be discriminated, according to some writers from the various stages of Hyphus and Scarlet fever. [illegible]

cause [illegible] difficulty [illegible]
be excluded, by the absence of the
characteristic symptoms belonging
to the latter diseases. To differentiate
it from simple meningitis requires
the most difficulty and closest
observation. Simple meningitis is
to be discriminated by the absence
of the prodromic period and
the existing signs of tuberculous
and scrofulous diathesis. It is
probable that simple meningitis
can be traced to traumatic cause
all the symptoms of simple
meningitis are more acute
and the patient compelled
sooner to take to the bed. The
presence of tubercles in the choroid
coat of the eye as discovered by the

[illegible]
[illegible]
[illegible] runs its course
much sooner than Tubercular
Meningitis.

Causes

Most writers agree and it
seems the most probable, that
the disease in the child is hereditary,
the predisposition or general
diathesis being derived from
the parents. Yet cases do occur
where no such tendency exists.
It is often attributed to falls,
or blows upon the head, which
does not altogether seem impro-
bable. It may occur at any
period of life from the earliest
infancy to old age, sex, season, or occupation,

[illegible]

is occurrence.

Prognosis

We have no encouragement from Authors as to a favorable termination, but without hesitancy state that it tends to [illegible] a fatal issue.

Treatment.

Since the prognosis is so unfavorable, if we have not erred in our diagnosis the therapeutical remedies which are likely to be useful are [illegible]. Should the patient possibly pull through we are led to suspect the incorrectness of our diagnosis in as much as the disease [illegible]

[illegible] Simple Meningitis, [illegible]
our only [illegible] is to
hope that such it may be, and
in the majority of cases, is [illegible].
Of the patient to [illegible] when the
disease has become fully established, measures to palliate distress and prolong life are alone essential. The patient should
be placed in a dark room, and
kept quiet; cold applications
made, and convulsive state
diminished by large doses of Bromide
of Potash. Other remedies may
be used, as Iodide Potash, Cod liver Oil,*
Symptoms should be combatted as
they arise; Constipation relieved,
but active purgation, leeching, —
blood letting and blistering are not admi-

able, although they may at certain periods or stages be adopted, and per hope beneficially

Very Respectfully
H. C. Conley.

The Necessity of Prophylaxis.

By

Louis C. Agorice

Class 35.

Ergo te scito; ne speres scandere Deum,
Nam meditatio genti humanae commoda homo est.

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The Necessity of Prophylaxis

The nineteenth century is well named the age of progression. The wonderful strides she has made in every department of human knowledge west her ever from the cradle of Cimmerian darkness. She has opened wide to aspiring minds every pathway of honest emulation and illumined for further progress every avenue which leads to higher, nobler and grander achievements. The Science of Medicine, perhaps above all others, has kept pace with this advancing spirit. We have only to open its pages to be convinced of the fact. Over hundreds of worthy disciples culling from the mineral and vegetable kingdom the most precious remedies tell us of this fact. The chemists by isolating the active principles

of medicines and discovering new combinations of inorganic substances furnish us with nicer and more pointed weapons with which to combat disease. Auscultation has opened up to us a new method of investigating diseased organs; whilst the Ophthalmoscope and Laryngoscope reveal to human vision living parts never before inspected. The microscope lifts the veil of many physiological processes and brings to light the heretofore unknown causes of many pathological actions, and this has made possible the cellular pathology of Virchow which has taught us how we live and grow and how and why we are sick, and thus brought us very near to the real secret of diseased action. Anaesthesia and opium robbing life of its pain and

giving to man a new lease for happiness
speaks sufficient of its triumphs" whilst
the hypodermic method of medication, the
varicose modes of manipulation, and listerism
with its modifications convince us, should it
be necessary, that medicine above any science
has reached a plane of unequalled splendor.
But the spirit of restlessness and brilliancy
has stepped beyond its sphere. The rein of
sober thought has too often been undrawn,
and the underlying principles in all
medicine have thus often been contemned.
The "hair-splitting" theories of the day lead
us too far from the powers of art, and the
eagerness "to carve out a reputation in
another man's frame" teach us too often
to forget the ministrations of nature.

This truly is a most blasphemous inversion of order, for the creature to attempt to give laws to the Creator.

"To seize the balance and the rod
Rejudge his Justice be the God of God."

It is the finite measuring the Infinite - weak, puny, human reason declaring herself the judge and arbiter of Divine, Eternal Truths. But true Medicine must speak for herself. In the language of Renouard it has for its aim - "the preservation of health, the cure of diseases, and the physical perfection of man." It would then be just as rational to pronounce the Sun an obsolete and antiquated luminary, quite good enough to give light and warmth and gladness to the world some thousand

years ago but now totally unsuited to our increased knowledge of sanitary philosophy and higher wants, as to strike from our store of remedial agents the necessity of prophylaxis in every branch of Medical Science. To the student about entering upon the responsibilities of his profession these hygienic and preventive measures become of vital importance. Confined as he is the greater portion of the day to the heated atmosphere of the lecture room and at night to the ill-ventilated, and may be over-warmed apartments of a boarding house; run down in vitality and suffering from diseases the result of a sedentary life; the medical man may at a glance see the necessity of restoring

prophylaxis as the great panacea in promoting and preserving health and happiness. Familiar, as is necessitated by our vocation, with the sad varieties of human pain and weakness to us are intrusted in more than ordinary measure opportunities of doing good to our afflicted fellow creatures — not only by alleviating their sufferings, but by a well directed moral influence which every physician especially should command. Let us then briefly glance at some points wherein the physician, as the minister and interpreter of nature, joins hands with her in warding off some of our most common diseases.

And, firstly we may revert to some of those diseases of the eye that arise from

the want of proper attention. Myopia and strabismus as we are taught most commonly arise from too close application, the result of our burdensome system of education, whilst purulent ophthalmia and its too often destructive consequences teach us every day the necessity of watchfulness and care. There is no doubt that it is the physician's moral duty to appraise the Faculty of watching over their children more zealously, whilst at the same time he has to good use the means of prevention which the Ophthalmoscope and modern medical science place at his disposal. Otherwise we may have on the one side a generation of "near-sighted" people seeing, as Shakespeare says, "no further than their nose," and on the

other hand, the direful results of intra-ocular diseases ending perhaps in total loss of vision. In Surgery above any other branch of Medical Science has the necessity of preventive treatment been demonstrated and established. This innovation which bids fair to be one of the greatest which has ever been effected in that art has already laid the foundation whereon a systematic basis of antiseptic medication can be fixed. In fact it has become the great bulwark of the entire field of modern surgery and in the hands of experienced men is working wonders in the art. We find its powers evinced in every operation that is performed under the guidance of general hygienic rules and antiseptic precautions —

and thus gangrene and pyemia those heretofore bug-bears of the surgical ward are throttled as it were before allowed to breathe the flame of death. Like precautions of another kind most loudly called for may well be classed under the practitioners care. I mean that virtue and chastity the chief foundation of moral firmness and manliness of character has become a subject of ridicule to such an extent that immoral people walk unblushingly before us not only injuring themselves but spreading the seeds of destruction to such an extent known only to the physician - even within the very threshold of our best ordered communities. There is no doubt that syphilis is sapping the

very life out of many of our young men and women and thus giving to the world a puny deformed and weak minded progeny, truly fit subjects for commiseration. But the tide of destruction stops not here. Lurking within the damnable shadows of such hideous propagators of immorality and infirmity, and unfortunately too in the higher walks of life is to be found the prevalent and still spreading curse of masturbation. Next to criminal abortion, says Prof. Howard, in his lectures on diseases of Women, - "Masturbation is the blackest evil of the day." It is the maggot which is gnawing at the base of human happiness and blighting the fondest hopes of happy marriage unions. It is the physician's

duty to point its evil consequences in the blackest terms the truth will permit, for if an evil is to be eradicated it should not only be recognized but effectually grappled with and extirpated. "By such like determined and strenuous efforts not only would lost manhood" be regained and the marriage "yoke" become as it should be, the golden link of inseperable love - but insanity and bodily deformities would not near so often stare us in the face as the outcome of this most beastly and degrading vice. I hold then that it is one of the highest duties of the physician to disseminate correct views upon these points, - one of the greatest dereliction in duties them if not

with open approbation at least with silent consent.

And now let us turn our attention briefly to the necessity of zealously guarding the normal function of our digestive organs as a prophylactic means of nipping in the bud "nine tenths" of the diseases with which we are acquainted. There is an axiom in medicine as old as its history - that to "starve the rich and feed the poor" is to combine in one great and everlasting pill an antidote for the majority of human sufferings. The rich man too often lives to eat and reaps his restitution in one of the many variable complaints of the digestive system which revolts his beastly propensities. On the other hand

the poor man without sufficient food seeks the necessary stimulation in opium or alcoholic drinks and thus nourishes perhaps without his knowledge those seeds of drunkenness and imbecillity which, like "a roaring lion seeks whom it may devour". We believe then that good food and clothing will do more toward checking intemperance than all the worthy "tee-total" societies of the day. We can not doubt that many diseases are established, and many more perpetuated by impoverished blood and the disordered state of the nervous system depending upon spanemia. So well known is the fact that a generous diet often constitutes an important element in the treatment

of diseased conditions and its result in improved hematoses is hailed as the harbinger of approaching improvement. The great problem in all prophylactic treatment is to discover those means which will fortify the system against invasion and at the same time do the least possible injury to the human organism. And in this connection we can not doubt that the proper mastication of well-cooked food a suitable amount of clothing and an active state of life are the means whereby vigorous health may be attained and the system fortified against vicissitudes that could not otherwise be avoided. There is yet another prolific source of disease which is, and properly so, engaging

the physicians attention and which when properly appreciated and corrected will wield a magical influence in checking the disastrous onslaught it is making in the human race. I mean to say that our empirical system of education is breaking down the body at the expense of the mind. There can be no doubt of it. We have only to glance over the statistics of our insane asylums and at the admirable essay of Prof. McSherry before the Teachers Association of Baltimore some few weeks ago, to be conclusively shown that the present system of "cramming" the mind at the expense of physical exercise is the very hot-bed wherein either insanity is nourished for

future fructification or the soil prepared for the early development of some other malignant trouble. "At this age, says Prof. McSherry, the needs of the stomach are greater than those of the mind." and as we know from physiology that a mixed system of diet is absolutely necessary to preserve health so a mixed system of training is equally beneficial. It will not do that exclusive attention be paid to the cultivation of the brain and nervous system. Physical exercise is an essential part in healthy mental knowledge; for it rests the mind, invigorates the body and produces under proper conditions the "Mens sana in corpore sano" which is the object and aim

of medical science. In illustration of these views we have only to scan the pages of Grecian history and there see how health, longevity of life and that ideal of bodily beauty resulted from the judicious union of mental and physical training. Probably in no other race of mankind has the world attained such perfection as in this great people during their ascendency; and surely among no other race of men were cleanliness, good nourishment and hygiene the very handmaids of prophylaxis more insisted upon and enforced. And right here we are most most forcibly impressed with the necessity of precaution in that class of diseases which is becoming more and more

prevalent as the result of fashion and the accomplishment, of what proves to be distorted aesthetics. Yet the fact is too well known that no other diseases are so prevalent as the common ailments of women, the outcome of what appears to be tasteful, rather than sensible accomplishments; but by which the happiness of her or her family is destroyed, if not too, her usefulness diminished. The customs of civilized life have depreciated womans powers of endurance and capacity of resisting disease; — not that the uncivilized are not prone to disease too common now in our civilized communities, but not so often as is found in those who are influenced by the physically depreciating habits of a civilized life. Instead

of being encouraged and directed to engage in out-door pursuits calculated to create muscular power and blooming health. most of our young women are nourished and reared and taught to believe that such enjoyments are hoydenish and unbecoming and hence there are today within this very city hundreds who drag out their lives of misery with diseases which have resulted from the neglect of exercise and that other monster vice of tight-lacing. When there the day fully arrives when the physician shall consider it his duty to insist that our young women shall be educated physically with that same assiduity which is now bestowed upon their mental development, and when they shall also teach their mothers

the necessity of seeing their daughters grow up strong, healthy and blooming women and not solely highly educated valetudinarians, then indeed will prophylaxis have done mankind a wonderful work by nipping in the bud the most prolific of the predisposing causes of disease in woman and at the same time render her truly fit for the noble and responsible duties of wife and mother.

To sum up briefly then, the well being of the human race depends in great measure upon the physician as the public watchman over the public weal upon diligent devotion to the duties of his profession and to the honest effort he makes to display the truth accurately

and intelligibly. The profession of medicine having for its end the common good of mankind knows nothing of national enmities, of political strife of sectarian dissensions. Disease and pain the sole conditions of its ministry - it is disquieted by no misgivings concerning the justice and honesty of a clients cause, but dispenses its peculiar gifts without stint or scruple to men of every country and party and rank and religion and even to men of no religion at all, - and thus like the quality of mercy of which it is the favorite handmaid: "It blesseth him that gives and him that takes."

In this short essay then it may be seen

I have endeavoured to insist that in proportion as the treatment of diseases shall be withdrawn from the domain of empiricism and be founded on prophylactic and scientific principles in that proportion will the medical profession acquire that dignified confidence which shall keep it steady to its high and noble aims, and which must ever attain for us that general estimation which will be fully accorded to its enlightened and faithful votaries. -

Elias C. Cornico -
of Maryland. -

The Liver

Its Functions

Some diseases of the organ

by

E. M. Beach

of N.J.

The Liver

The Liver the largest gland of the body, weighing from three to four pounds, is intended for the secretion of the bile, and also for effecting certain important changes in the blood. The Gland is situated in the right hypochondriac extending across to the left -
The upper surface is convex, covered with peritoneum. divided into two unequal lobes by a fold of peritoneum called the Suspensory Ligament. It is in relation with under surface of the diaphragm.

The under surface is concave directed downward and backward, in relation with stomach denodenum hepatic flexure colon, right kidney & supra renal capsule. This surface is divided into right & left lobes by the longitudinal fissure.

The anterior border is thin sharp and marked opposite the broad ligs by a deep notch. In adult males this border should correspond to the margin of the ribs, but in women and children it projects some what below. The position of the organ varies with the posture of the body. In the upright & sitting posture it recedes behind the ribs, also with the movements of the

composed of branches of portal vein and radicles of hepatic vein, of minute arteries and probably nerves and lymphatics. Hepatic cells form the chief mass of substance of the lobules. They are more or less of a spheroidal form but take various shapes from mutual pressure; they vary in size from 1/1000 to 1/2000 in diam. contains a distinct nucleus and often two, within the nucleus or a highly refracting nucleolus with granules. The contents are viscid or contains yellow particles (the coloring matter of bile) and oil globules. These cells are the agents which secrete the bile. The origin of the biliary ducts which transmit the bile

from the other [illegible] to
some discussion, the difficulty
arising from the [illegible] of
the ducts or an inability to [illegible]
inject the specimens for demonstra-
tion. Three views as to their origin
are held. 1st Kiernan's [illegible] they com-
mence external to the lobules in
an interlobular plexus; the bile
being secreted by the hepatic
cells within the lobules & passing
into the radicles of the ducts by
osmosis. The other two opinions
coincide in the belief that the
radicles commence within the
lobules by a plexus of intralobular
channels, but they differ as to the
relation between the channels and

the hepatic [illegible] - Chorzonszczewskyi
was the 1st anatomist who succeeded
in demonstrating these intra-lobular
biliary channels, by injecting coloring
matter into the blood of a living
animal, the animal shortly afterwards
being kill, the coloring matter was
found in the small ducts - The ducts
finally form two large trunks which
leave the liver at the transverse
fissure, the union of these is the
hepatic duct, which passes downward
and to the right an inch and a half
to join at a sharp angle the Cystic
duct and thus form the ductus
communis choledochus = The Gall bladder
is the reservoir for the bile, it is
~~pear~~ shaped and has capacity of 8 or 10 g

The Biliary ducts have diverticula which act as [illegible] to a certain extent. The Gall bladder has a muscular coat which contract to force the bile into the duodenum. It is most probable that the biliary ducts possess some muscular fibres also = Less force is required to force the bile into the Gall bladder than into the duodenum. Alcohol seems to increase the secretion of the bile. Nervous influences such as sorrow and shock lessen its secretion.

Bile is slightly alkaline or neutral, it is a ropy fluid of a faint animal odor and a specific gravity of 1020. The ropy character is due to the

[illegible]

Gall Bladder, this varies according to the time it remains in the reservoir. Human bile is a yellowish brown-green fluid. All vertebrate animals secrete bile. The color in herbivorous animals is more decidedly green, in omnivorous it is of a brownish color. This difference depends upon the two coloring matters bilirubin & biliverdin. The color of bile is also modified by oxidizing agents, bilirubin when oxidized becomes greenish in [illegible] - this may be effected by merely exposing the bile to the atmosphere or more quickly by a few [illegible]

nitric acid. The green stools
of young chicken and often
pronounced by the bile resisting
an acid in the intestines —
the coloring matter being oxidized —
The color of green bile will dis-
appear if the bile be excluded
from the atmosphere — The change
of color observed in bile when an
acid is brought in contact with
it was taken advantage of by
Gmelin in his test for bile coloring
matter in fluids = Urine or
any fluid in wh bilirubin exist
being brought in contact with
yellow nitric acid a play of
colors will be observed — this test
should be made on a saucer or plate

[illegible]
[illegible]
bile = The bile is dichroic, i.e.
it has two different colours.
It is also efflorescent, i.e. is one
to the biliary salts. This can be
observed in a watery solution
of the salts = The most important
constituents of the bile are the salts,
Sodium glycholate and taurocholate
Some times one predominating o-
ther the other = From a series of
experiments the former salts were
found to be more constant than
the latter. The secretion of the bile
is constant but it commences
to increase shortly after a meal
and reaches its maximum about the 6 hr

after a meal [illegible]. But [illegible]
[illegible] the largest quantity is [illegible]
changed into the [illegible] when
the chyme comes in contact with
the walls of duodenum and by its [illegible]
properties causes a reflex action &
contraction of the Gall bladder.
The average amount of bile [illegible]
by a medium size man in 24 hrs
is 2.2 lbs. Notwithstanding the
well known character of the bile, and
the investigations by many competent
observers, the medical student
of the 19th century is brought
face to face with the fact, that
the physiological action of bile
is not thoroughly understood.
It has no digestive action [illegible]

fats not so perfectly as the pancreatic secretion.

nd It counteracts the acidity of the chyme and thus assists the action of trypsin on proteins

re It excites muscular action of the intestines

th. It has antiseptic properties and prevents putrefactive decomposition. It has influence in promoting the absorption of fats by soaking the epithelial cells and by its alkalinity facilitates the passage of oily substances into the villi. The liver receives its blood supply from two sources: hepatic artery and portal vein; both enter the organ at the transverse fissure

go on in the liver after death.
A liver left for 5 or 8 hours after
death, the water passes through
it, we find the water contains
quite a quantity of Glucose
which has accumulated in the
organ. This accumulation does
not take place in the organ
during life for as fast as it is
made it is conveyed into the cir-
culation, as a rule this Glucose does
not pass beyond the general circulation,
but if from any cause it rises above
a certain proportion it fails to be
assimilated and is discharged
by the kidneys producing a
condition of diabetes, which
may only be transitory

Two forms of Diabetes are observed, one when the patient takes carbohydrate food and another when no such food is taken and must be formed from substances not at all allied to sugar. The former might be caused in several ways - 1st the liver cells might cease to stop the sugar, letting it pass into the general circulation. 2nd the tissues might cease to use their normal amount - 3rd the liver might pass on its glycogen faster than the tissues could use. Artificially we can produce diabetes in several ways. Curari poisoning paralyzes the vaso-motor nerves, makes the muscles [illegible]

[illegible]

[illegible] —

[illegible]

presumably by stopping oxidation —

Pricking a certain point in the medulla oblongata is said to cause a temporary diabetes, due it is thought, to injury to that part of the vaso motor centre wh. controls the muscular coat of hepatic artery, more blood is carried through the liver and an excess of glycogen is turned into Glucose:

The production of urea in the liver and not in the kidneys, as was formerly held, is another property attributed to the organ — It is thought

that the peptones are [illegible] the glands and [illegible] of into a nitrogenous part (urea) and a non-nitrogenous part (glycogen). However this may be, in much phosphorus poisoning and in yellow atrophy of this organ urea almost [illegible] pears from the urine.

We have seen that disorders of the glycogenic function lead to diabetes. Now where the nitrogenous substances are not converted into urea we have a condition of the blood known as lithaemia. This may be relieved for a time by the kidneys, showing itself by a deposit in the urine of lithic acid, lithates, and pigmentation

matter - These deposits may last for years without ~~with~~ causing any great disturbance of the health but after a while the excess of lithic acid or can no longer be eliminated by the kidneys and they accumulate in the system giving rise to various distressing symptoms viz, epigastric pain palpitation, restlessness at night, ill temper, hypochondriacal gout, urinary calculi, biliary calculi, predisposition to local inflammation &c.

Disorders of the biliary function may be divided into two classes

(a) where there is an excess of bile.

(b) where there is an deficiency

in secretion of bile.
The 1st is characterized by bilious diarrhoea, copious blood stools, nausea, vomiting and abdominal pains. It is usually a result of congestion of the organ. Where the bile is not secreted in proper amount we have dyspeptic symptoms, furred tongue, unpleasant taste in the mouth, costiveness and the evacuations, when they occur, are of a light color.
Among the remedies which promote the elimination of the bile if not its secretion, Mercury holds a prominent place.
The experience of the India medical

officers has shown conclusively that mercurials are harmful in acute hepatitis, hepatic abscess jaundice from gall-stone and acute yellow atrophy.

There is no evidence to prove that mercury renders any service in cirrhosis of the liver.

Podophyllin combined with hyoscyamus or cannabis indica to prevent griping is very useful in many hepatic troubles.

Colocynth, Rhubarb, Taraxacum with Bicarb. Soda, Nitro Muriatic acid are also useful.

In no class of disorders do hygienic agents act more beneficially than in these functional disorders.

ments of the liver. [illegible],
strict attention to the functions
of the skin, and proper diet
are often curative – Exercise and
are walking or horseback riding
and especially the latter stimulate
the liver, by pressure of the
abdominal muscles, to its proper
work. – A good sponge bath and
brisk rubbing with a [illegible]
towel will be found very
serviceable –
The liver is subject to many
changes, due to malaria, alcohol
hot climate, highly seasoned
food & suppurative diseases.
The changes brought about in
the organs by malaria and [illegible]

are the most frequently
met with in this country -
Cirrhosis is a chronic disease
of the liver in which it becomes
hardened and more or less diminished
in size - The capsule of Glisson
is increased and this new con-
nective tissue contracting compresses
the hepatic cells and they atrophy.
Ascites generally accompanies
cirrhosis - The cause of this
disease is alcohol taken whilst
water on an empty stomach,
it is soon absorbed and passes
[illegible] to the liver where it lights
up this low grade of [illegible]
It is not necessary that a person
should be a habitual [illegible]

[illegible] -

[illegible] [illegible] [illegible] [illegible]
[illegible] [illegible] [illegible] [illegible]
[illegible] [illegible] [illegible] [illegible]